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Addressing Sexual Assault: How Architectural Design Can Promote Life Long Healing

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ABSTRACT

The Trauma of any origin can forever alter the way individuals live their everyday lives. Relationships with people, places, and the self are compromised and may never fully heal. Generally, Post-traumatic Stress Disorder is a globally accepted condition, with many great strides being made to provide centers of continual healing to those who suffer from it. The two most common demographics that are clinically diagnosed with PTSD are military Veterans and survivors of sexual assault. Where there is a lot of research and active development towards establishing treatments in combination with spacial and architectural design for Veterans, there is virtually no base of research of similar goals geared towards survivors of Sexual Assault. This group tends to be sequestered to crisis centers and hospital wings, with no real centralization of life-long care. Trauma and addiction recovery centers tend to take on PTSD as a secondary treatment to drug abuse. Sexual Assault Survivors exist within every niche of our communities. Still, due to culturally ingrained stigmas and the nature of the assault itself, it has been challenging to address the indefinite needs of these victims. PTSD is a condition that requires a medically invisible type of care. The cures can be achieved through spacial relationships, psychological reactions to color and light, and programs that allow individuals to be part of a group. Transparency through sight lines and curved walls paired with an encompassing sense of security along the perimeter and through entry are the end goals of the architectural design. These fundamental ideas can be the building blocks of architectural design to help build a center focused on providing continual healing to Sexual Assault Survivors.

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TERMS

The following is a list of terms pertinent to the information provided and vital in establishing a common language to focus the spectrum of research and design.

Sexual Assault – any non-consensual sexual act of physical contact and penetration.[1]

Sexual harassment - creating a hostile environment, pervasive jokes/comments, looks, and body language that makes an individual feel harassed.[1]

Sexual Assault Victim (SAV) – a) when referring to someone who has recently been affected by sexual violence; b) a term used when discussing a particular crime; or when relating to aspects of the criminal justice system.[1]

Sexual Assault Survivor (SAS) – a) someone who has gone through or has started the recovery process; b) a term used when discussing the short or long term effects of sexual violence.[1]

Post-Traumatic Stress Disorder (PTSD) - a condition of persistent mental and emotional stress occurring as a result of injury or severe psychological shock, typically involving disturbance of sleep and constant vivid recall of the experience, with dulled responses to others and the outside world.[2]

[1] Types of Sexual Violence." RAINN | The Nation's Largest Anti-sexual Violence Organization. Accessed December 12, 2018. https://www.rainn.org/types-sexual-violence.

[2] "Post-Traumatic Stress Disorder (PTSD)." Mayo Clinic. July 06, 2018. Accessed December 12, 2018. https://www.mayoclinic.org/diseases-conditions/post-Traumatic-stress-disorder/symptoms-causes/syc-20355967.

INTRODUCTION: Establishing the Need

Sexual Assault is by no means a new concept, and it seems to be a crime that is currently on the decline. Since 1993, the rate of sexual assault has dropped by 63% (Fig. 1). These types of figures must always be considered in hand with the fact that a large portion of survivors do not report the assault.

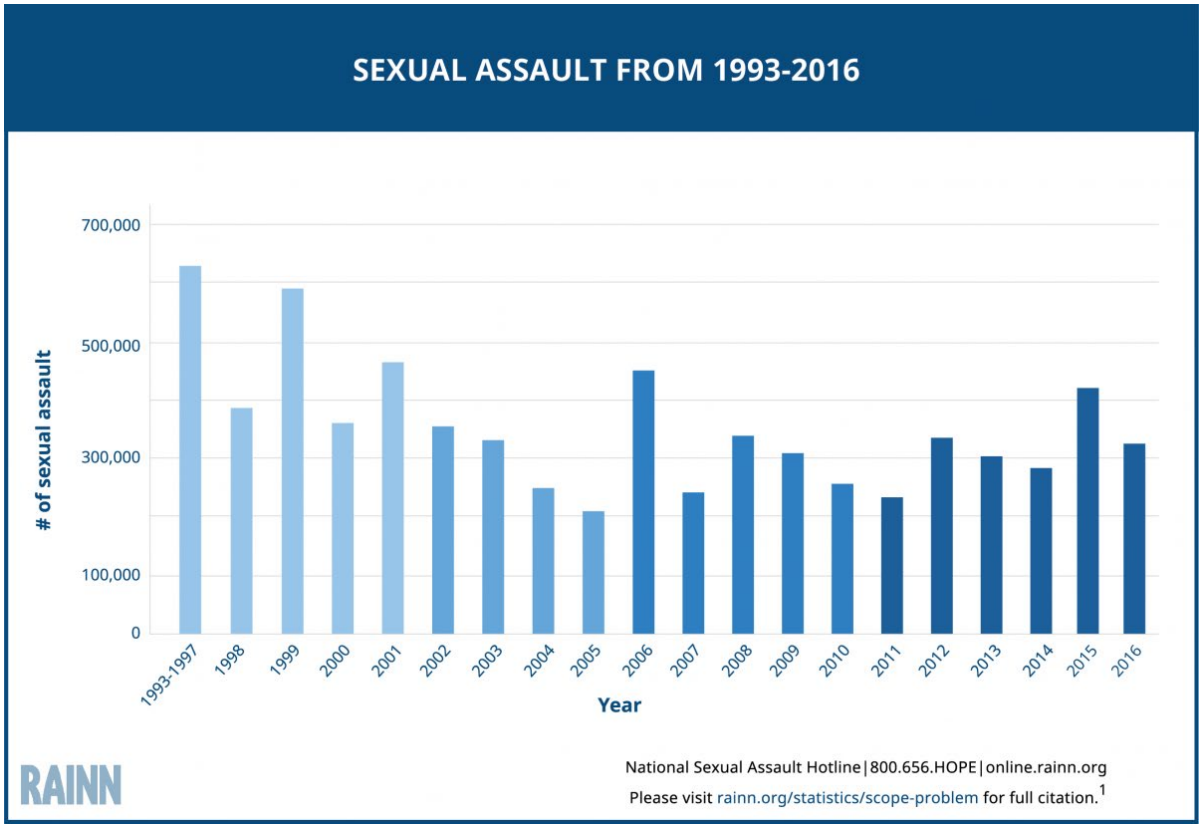

Figure 1. Graph of sexual assault rate from 1993-2016. Reprinted from RAINN Statistics, by RAINN, retrieved from https://www.rainn.org/statistics/scope-problem

The biggest obstacle in handling sexual assault lies within the concept of the Sexual Assault Victim versus the Sexual Assault Survivor. A Survivor is, by default, a victim, but they represent the life long struggle rather than the event(s) of the assault(s).

What mainstream media and most communities tend to be concerned with is this event and inherently the victim[3]. This focus on a very narrow view of the problem has created tunnel vision and collective public ignorance that leads towards acts such as victim shaming. In the reality of an SAV, they are a victim in the moment of the act and a survivor for every moment of the remainder of their lives. Therefore, a majority of their turmoil transforms from the physical to the mental. Even if the rate of sexual assault has been cut in half, the number of survivors is perpetually increasing. There are no pure medical cures for a sexual assault survivor. Still, there are tools, methods, and designs that can be explored and implemented through research to help soothe and soften the unpredictable day-to-day obstacles that these survivors face.

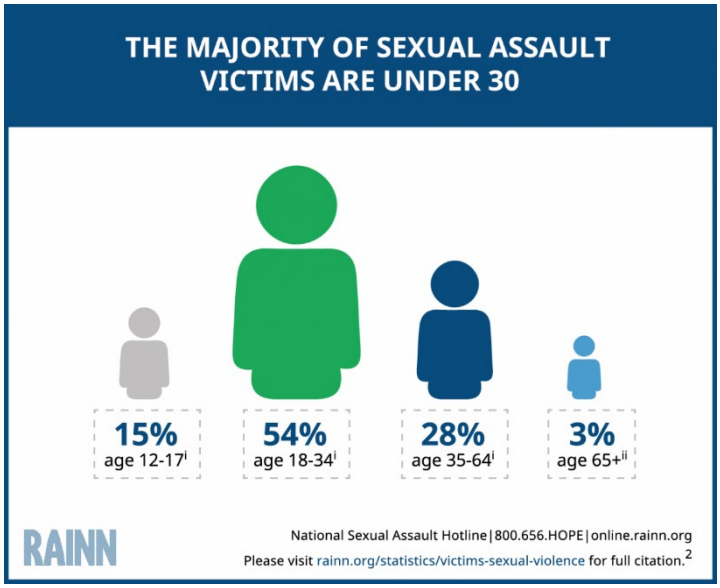

Figure 2. Graphic of sexual assault risk. Reprinted from RAINN Statistics, by RAINN, retrieved from https://www.rainn.org/statistics/victims-sexual-violence

There is ample research presenting numbers regarding the scope of sexual assault victims and some vigorous attempts to quantify the struggles of Sexual Assault Survivors.

[3] Cjr, M. D. (2018, October 26). Is the news media complicit in spreading rape culture? Retrieved from https://www.cjr.org/analysis/news-study-rape-culture.php

Approximately 160,000 Americans between the ages of 18-34 years old are assaulted every year (fig. 2), most likely by someone that they know (fig. 3), and most of them will never see their assailant in jail. However, these numbers most likely fail to accurately represent the number of survivors that are truly out there. To be more accurate, you need to multiply that number by 3, because studies show *less than a third* of sexual assault survivors report the assault[1]. This inherent problem makes sexual assault the most unreported crime in the world.

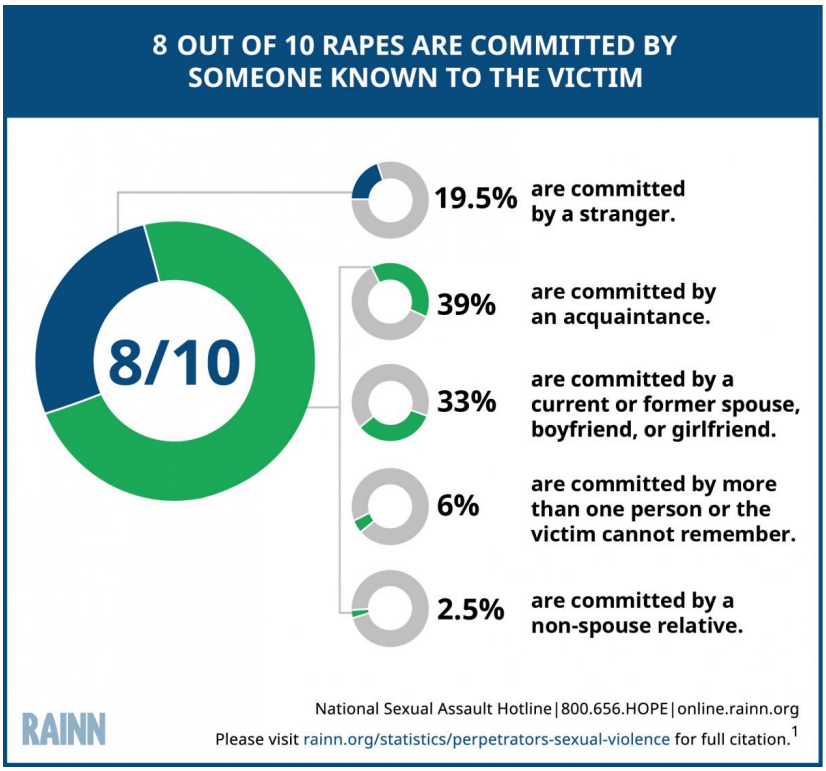

Figure 3. Graph of Perpetrators of Sexual Violence. Reprinted from RAINN Statistics, by RAINN, retrieved from https://www.rainn.org/statistics/perpetrators-sexual-voilence

Moving from the physical event to the mental onslaught, “the likelihood that a person suffers suicidal or depressive thoughts increases after sexual violence […]” with 94% suffering from PTSD, 13% attempting suicide, and 70% experiencing “[…] moderate to severe distress, a larger percentage than any other violent crime[4]." Sexual violence is also known to affect victims' relationships with their family, friends, and co-workers. Studies show that 37% experience problems with friends and family, primarily due to a decreased sense of trust and no longer feeling close to them after the crime. [4] Additionally, 79% of the survivors victimized by someone they know experience measurable issues at work or school. [4]

All of the statistics and studies drawback to an over-arching presence of PTSD in these survivors. PTSD breeds a distorted sense of self, space, and the relationship between self and space. Sexual assault survivors face a somewhat unpredictable risk of experiencing PTSD symptoms. Where veterans suffering PTSD typically have a relatively well-known base of triggers with variants relating to different wars and warzones, SAS experience a broadloom of possible environmental, visual, and audio triggers.

To better understand how PTSD affects its victims, it is sometimes easier to grasp the negative results it produces in order to move towards addressing the core of the problem itself. For example, climate change is a massive challenge with many moving parts. However, to understand the issues better, considering the worldwide food crisis and climate refugees, it can potentially create, focuses the problem solver.

[4] RAINN | The Nation's Largest Anti-sexual Violence Organization. Accessed December 12, 2018. https://www.rainn.org/statistics/victims-sexual-violence.

To more fully comprehend and address the long-term ailments of the Sexual Assault Survivor, this Thesis will attempt to resolve the ways PTSD has altered their relationships with other individuals – in both the communal and personal sense – and their relationships with the spaces they require in order to live their lives fully.

PROBLEM STATEMENT

Sexual Assault Survivors face life-long PTSD that threatens their ability to achieve success and happiness by forever altering the relationships they have with both people and spaces. Since it is in the spaces we occupy where we develop such relationships, architecture may have a substantial ability to address these obstacles. By designing a center for invisible healing, we can provide the survivor with a place where their challenges are respected, and connections to the world and themselves can go through the process of rediscovery and management.

LITERATURE REVIEW: PTSD INFORMED PROGRAMMING

"Review of literature suggests that a well-defined, bounded, clear and extensive body of literature regarding mental health […]"[5] and architectural design is absent.[6] When considering spaces and programs that attempt to address Trauma, you can discover a long list of varieties. The most accessible category identified is an addiction rehab center. These facilities work hard to deal with the complexities of drug addictions and the underlying Trauma that feeds them. Next in line will be major spinal injury Trauma. And it is these physical injuries and ailments that dominate this field. But when researching these types of medical spaces, the gaps that are left unaddressed become prevalent. The recent #MeToo movement has made quite an impact and is forcing individuals and communities to hear and see the manifestation of Sexual Assault Trauma. The reality of this Trauma is that it cannot be solely addressed by discretionary crisis centers or medical wings in hospitals. In order to better understand the unique demands of a Sexual Assault Trauma center – a model that does not currently exist – understanding the complexities of this specific Trauma is vital. This paired with an understanding of how comparable programs may or may not be related demonstrate the demands of this literary review.

Recovery from sexual assault-related Post-traumatic Stress Disorder (PTSD) is not "[…]solely measured by eliminating symptoms or achieving specific outcomes. Healing from this Trauma does not mean that the survivor will forget the experience or

[5]Khanade, Kunal, Carolina Rodriguez-Paras, Farzan Sasangohar, and Sarah Lawley. "Investigating Architectural and Space Design Considerations for Post-Traumatic Stress Disorder (PTSD) Patients." *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* 62, no. 1 (September 2018): 1722–26. doi:10.1177/1541931218621390.

[6] Gharib, M.A., Golembiewski, J.A. & Moustafa, A.A. Mental health and urban design – zoning in on PTSD. *Curr Psychol* **39,** 167–173 (2020). https://doi.org/10.1007/s12144-017-9746-x

never again experience any symptoms".[7] Instead, successful recovery is subjective and measured by the following outcomes:

- increased involvement in the present
- acquiring skills and attitudes to regain control of his or her life, forgive him or herself for guilt, shame and other negative cognitions
- gain stress reduction skills for overall better functioning.[8]

There are many factors involved in successful recovery, including the degree of support received, previous self-concept, personal strength, and professional treatment provided by the medical and justice systems.[9] PTSD is one of the problems that may result from the failure of the recovery process. Furthermore, with a reported PTSD fate for this

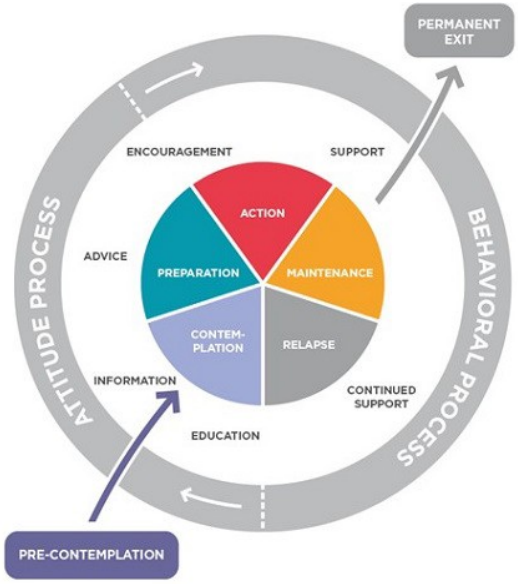

Figure 4. Model of Behavioral Change. Reprinted from The Transtheoretical Model, http://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/BehavioralChangeTheories/BehavioralChangeTheories6.html.

[7] Chivers-Wilson K. A. (2006). Sexual assault and post-traumatic stress disorder: a review of the biological, psychological and sociological factors and treatments. *McGill journal of medicine : MJM : an international forum for the advancement of medical sciences by students*, *9*(2), 111–118.

[8] Dunmore E, Clark DM, Ehlers A. Cognitive Factors Involved in the Onset and Maintenance of Post Traumatic Stress Disorder (PTSD) after Physical or Sexual Assault. Behaviour Research and Therapy. 1999;37:809–829. [PubMed]

[9] Matsakis, A. I Can't Get Over It: Handbook for Trauma Survivors. Oakland, California: New Harbinger Publications; 1996.

particular group of survivors being at 94%[10], there is a need to confront the current recovery process. In addressing the stages of recovery, it makes sense to model such programming after the six stages of change adopted by many other programs.

Those six stages are[11]:

a. Pre-contemplation – people do not intend to take action in the foreseeable future
b. Contemplation- There is active recognition but ambivalence toward taking action.
c. Preparation – People are ready to take action
d. Action – Changes are being made to behavior and lifestyles
e. Maintenance – sustained lifestyle and behavior change
f. Relapse – Often some if not all good behaviors are lost

As shown in figure 4, at the maintenance stage, there is a suggested permanent exit. However, in the case of sexual assault, since we are not dealing directly with bad habits, but the cause of possible detrimental patterns, behavioral processes, and how they are addressed and handled is considered a lifelong process.

Cognitive factors play a significant role in the onset, severity, and outcome of PTSD after sexual assault.[12] These factors include mental defeat and confusion, negative appraisal of emotions and symptoms, avoidance and perceived negative responses from others.[10] If the survivor of sexual assault believes that others have failed to react in a positive and supportive manner, there is a higher risk of PTSD.[13] It has been suggested

[10] Victims of Sexual Violence: Statistics | RAINN. Accessed November 01, 2018. https://www.rainn.org/statistics/victims-sexual-violence.

[11] "Behavioral Change Models." The Transtheoretical Model (Stages of Change). Accessed November 01, 2018. http://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/BehavioralChangeTheories/BehavioralChangeTheories6.html.

[12] Koss MP, Figuerdo AJ. Change in Cognitive Mediators of Rape's Impact on Psychosocial Health Across 2 Years of Recovery. Journal of Consulting and Clinical Psychology. 2004;72(6):1063–1072.

[13] National Center for Post Traumatic Stress Disorder. Epidemiological Facts About PTSD - A National Center for PTSD Fact Sheet. Retrieved April 1, 2005, from http://www.ncptsd.va.gov/facts/general/fs_epidemiological.html; 2005.

that Trauma recovery is characterized by a reprogramming, integration, and habituation to the Traumatic images, leading to a restoration of a sense of safety.[14] Over time, PTSD symptoms will decrease, the survivor will be less preoccupied with blame towards self and others, and a will to achieve a regained sense of control.[11]

Early intervention is critical for sexual assault victims because the level of distress immediately following the assault is strongly correlated to future pathologies and PTSD.[15] In a study collecting self-reports from survivors of assault that assessed their degree of support and psychological distress during and immediately following the rape, it was found that high distress levels significantly predicted increased levels of fear and anxiety in the months following the assault.[12] As the level of distress is strongly correlated to PTSD symptoms, an attempt to decrease levels of distress immediately following sexual assault may result in a more favorable treatment outcome. When survivors seek medical assistance, the forensic rape exam can be very Traumatizing.[16] Resnick et al., demonstrated that meeting with a rape crisis counselor or viewing a video before a forensic rape exam depicting in detail what to expect during the exam, resulted in decreased levels of stress after the review in test groups compared to the non-video control group.[13] Of all the eligible women, 81% agreed to participate in this video study, indicating that this is a feasible way to decrease distress and reduce future PTSD development following the physical examination.

Given this understanding of the Trauma, we can easily say that there are three definite reactions a survivor of sexual assault can experience throughout their lives:

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[14]Brewin CR, Dalgleish T, Joseph S. A Dual Representation Theory of Post-traumatic Stress Disorder. Psychological Review. 1996;103:670–686.

[15]Girelli SA, Resick PA, Marhoefer-Dvorak S, Hutter CK. Subjective Distress and Violence During Rape: Their Effects on Long-Term Fear. Violence and Victims. 1986;1:35–45.

[16] Resnick H, Acierno R, Holmes M, Kilpatrick DG, Jager N. Prevention of Post-Rape Psychopathology: Preliminary Findings of a Controlled Acute Rape Treatment Study. Journal of Anxiety Disorders. 1999;13(4):359–370

The Physical Reaction, the Mental Reaction, and the Behavioral Reaction.[17]

"Sexual assault victims first experience this physical reaction to danger during the attack itself. Weeks, months, or years later, the victim may experience a similar reaction (rapid heartbeat, rapid breathing, tense muscles, and so on) to reminders of the assault".[14] Sometimes certain people, places, things, or circumstances will trigger a mental reaction; at other times, the thoughts just enter the minds of the victims without any explicit stimuli. These kinds of experiences--of having frightening thoughts invade their minds--seem to be virtually uncontrollable at times and can make it difficult to concentrate. A third way that Trauma victims respond to the fear and anxiety associated with the Traumatic event is on a behavioral level, where they try to control or avoid the fear response itself. In other words, they try to avoid the intense discomfort associated with the physical and mental aspects of fear and anxiety. They will go to great lengths to avoid people, places, things, or situations that remind them of the assault. "One woman, for instance, who was sexually assaulted at work, began to experience flashbacks and felt physically shaky when she approached her office".[14]

Recovery from rape Trauma is a deeply personal and highly individualized journey. "As knowledge of the pathophysiology of PTSD improves, […] more Psychological therapies are available to assist survivors in their recovery".[18] The number of rape prevention centers and education programs is on the rise with aims to debunk rape myths, change victim-blaming attitudes, and de-stigmatize the subject. One of the most critical aspects of assisting the recovery process is empowering the survivor and

[17] "Counseling Center." Common Reactions to Sexual Assault - Counseling Center - Loyola University Maryland. https://www.loyola.edu/department/counseling-center/students/concerns/sexual-assault/reactions.

[18] Campbell R, Barnes HE, Ahrens CE, Wasco SM, Zaragoza-Diesfeld Y, Sefl T. Community Services for Rape Survivors Enhancing Psychological Well-Being or Increasing Trauma? Journal of Consulting and Clinical Psychology. 1999;67(6):847–858.

putting control back into their hands. The three-treatment modalities for the physical, mental, and behavioral impacts should not remain mutually exclusive. Physicians, therapists, law enforcement agencies, and family and friends must work together to find the meaning of recovery from the perspective of the survivors and to understand what conditions will facilitate growth and healing. When the therapies available to treat sexual-assault-related PTSD are brought together during the right stages in the recovery process to form a comprehensive treatment, greater success in decreasing the rate of PTSD associated with sexual assault may be achieved. Understanding this and studying the spaces that facilitate these groups, activities, and healing processes will be vital to the design process in developing a true Sexual Assault Trauma center.

TRIGGERING TRAUMA

The argument for the design of a center focused upon continuing treatment of Sexual Assault Survivors is based upon findings and life experiences that suggest Trauma has both a quantitative and qualitative effect upon the way an individual lives their life. Survivors of assault deal with a mental Trauma that associates itself to the objects similar to and reflective of the memory of the event. These memories "[…] commonly take the form of vivid and distressing sensory impressions from the Trauma that suddenly pop into one's mind and seem to come 'out of the blue'. The sensations are predominantly visual and subjectively seem to happen in the 'here and now' rather than being memories of past event."[19] Not all memory triggers are negative. Our brain constantly recalls memories based upon triggers. For example, the smell of lavender my recall a memory of travelling to France and visiting a

[19] Kleim, B., T. Ehring, and A. Ehlers. 2012. "Perceptual Processing Advantages for Trauma-Related Visual Cues in Post-Traumatic Stress Disorder." *Psychological Medicine* 42 (1) (01): 173-81.

lavender field. Individuals often recall and 'relive' their experiences through sensory recall. When studying the onset of PTSD like symptoms, there are implications "[…] that triggers are often perceptually similar to the intrusive content or to the stimuli that signaled the onset of the moments.[…] This raises the possibility that people with PTSD may preferentially process perceptual cures that are similar to those encountered during Trauma."[18] What this means is that the Trauma takes precedence to memory recall. Stimuli associated with the Traumatic event will dominate any forthcoming memory retrieval. Take the home environment for example. Many positive memories can and are associated with this familiar space, like the smell of turkey in the oven on Thanksgiving. But, on one Thanksgiving in that home, a family friend who attended assaulted you. So, the smell of turkey, though reminiscent of the twenty joyful holidays celebrated in the home, will often recall the one holiday during which the Trauma occurred.

The triggering of Trauma, though initially a mental reaction, can turn physical.[20] Numbness in the limbs, tunnel vision, dulled senses, and increased heart rate can all happen during negative sensory associations.[21] These physical responses have an irrefutable effect on both the productivity of individuals and their ability to assimilate into everyday experiences.

Looking back at the previously provided data, stating that sexual assaults are primarily committed by people the survivors know, it is reasonable to conclude that these assaults then also occur in places that the survivor is familiar with. The classroom, the office conference room, the doctor's office, the gym, the movie theater; all these spaces are

[20] Jackson C, Knott C, Skeate A, Birchwood M. The Trauma of first episode psychosis: the role of cognitive mediation. *Australian & New Zealand Journal of Psychiatry*. 2004;38(5):327-333. doi:10.1080/j.1440-1614.2004.01359.x.

[21] O'Kearney, Richard and Lian Parry. 2014. "Comparative Physiological Reactivity during Script-Driven Recall in Depression and Post-traumatic Stress Disorder." *Journal of Abnormal Psychology* 123 (3) (08): 523-532.

architecturally designed to typologies and familiarity so that the user can easily navigate these spaces. For a survivor of assault, this designing to typology has, in turn, also greatly multiplied the plausibility of a triggering event.[22]

OPEN AND ORGANIC SPACE

Perhaps one of the most useful pieces of research regarding the relationship of spacial design and those suffering from Trauma is a study done in 2018. A group of Veterans suffering from PTSD were interviewed and presented with spacial orientations to which they were asked to respond. "The findings suggest that certain indoor and outdoor design elements such as sharp corners, narrow pathways, blind spots, etc. increase anxiety and leads to triggers while soothing features (e.g. open spaces, situational awareness providing features such as lack of clutter or open floor plans) can relax veterans."[23] Some of

Figure 5. Design concept example of transparency, curves, light, & color. Reprinted From TSA Architects. https://www.tsa-usa.com/portfolio-item/veterans-affairs-medical-center-emergency-department/

[22] Christenfeld, R., Wagner, J., Pastva, W. G., Acrish, W. P. (1989). How physical settings affect chronic
[23] Khanade, Kunal, Carolina Rodriguez-Paras, Farzan Sasangohar, and Sarah Lawley. "Investigating Architectural and Space Design Considerations for Post-Traumatic Stress Disorder (PTSD) Patients." *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* 62, no. 1 (September 2018): 1722–26.

the biggest takeaways of the study suggest that high-quality maintenance, landscaping, and social spaces existing in flexible environments are key in the design. "Distance between the seating should be increased to reduce social pressure[…]", "[…] interior spaces need to be well lit[…]", and "[…] humanistic values need to be encouraged through colors and graphics, with the aid of art displays to create positive social engagement."[23]

A general theme started to become apparent in the responses. Curvature, color, light, and nature all emerged as themes of comfort. One respondent is quoted as saying:

> "I notice colors. Green makes me feel calm. […] I prefer round. It feels like it's more space. Maybe it's me but, circular and green, makes me feel comfy."[23]

Lighting is a key and powerful tool that is multi-faceted when considering the design of a center aimed at healing Trauma. Daylighting, or passive lighting, has a measurable influence on physical health by increasing vitamin D and serotonin levels. Both of these have not just an effect upon the mood of an individual but also the physical functionality of human systems.[24] The mental impact of simply experiencing daylight is also thought to influence activity level and the desire to achieve goals heavily.[25] As a supplement to daylighting, transparency and visibility are vital. The design should not induce the feeling of being trapped or hindered by avoiding narrow corridors and tight corner.[25] Visibility into and out of spaces with the facility should be maintained as much as possible. Providing glass doors and glass walls are another key demand.[22] Since hyper-awareness can often occur as a constant symptom, making the ability to be aware of your surroundings easier would help to alleviate the anxiety not seeing what might be around the corner.

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[24] Sansone, R. A., & Sansone, L. A. (2013). Sunshine, Serotonin, and Skin: A Partial Explanation for Seasonal Patterns in Psychopathology? Retrieved May 31, 2019, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3779905/

[25] More Vitamin D, Less Anxiety? . (n.d.). Retrieved May 31, 2019, from http://www.calmclinic.com/supplements-for-anxiety/vitamin-d

Stimulating outdoor type environments, though more public rather than private, became a strong design point. It was mutually felt by many of the subjects that natural spaces helped to encourage social interaction instead of isolation. There has been a substantial amount of research regarding nature being a tool for healing. Landscape Architect, Julie Moir Messervy, specializes in creating these types of spaces. Stemming from her time in Japan, she claims that nature is a critical element in contemplation and the ability to reflect. A therapeutic garden achieves this through invitation rather than by demand, allowing the user to decide upon the method of their interaction.[26]

Combining light and nature brings about the topic of color. Color can function as a processing cue for the environments a user inhabits.[27] Red and orange can induce agitation and easily excited nature, green is the most balancing of colors, blue can encourage relaxation and creativity, yellow encourages action, and purple often represents spirituality.[28] By creating a network of color, it can be used as an organizational tool of space, encouraging or defining activity designation throughout the programming.

Although the study regarding PTSD and spacial design focused on Veterans and not Sexual Assault Survivors, understanding that the symptoms are recognized as being substantially similar, it can still be concluded as a vital and useful grounds from which to advise a design direction.

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[26] Asla. "Icons of Healthcare & Therapeutic Garden Design: Julie Moir Messervy, Part 1." The Field, October 10, 2019. https://thefield.asla.org/2019/10/10/icons-of-healthcare-therapeutic-garden-design-julie-moir-messervy-part-1/#more-11884.

[27] Yildirim, K., A. Akalin-Baskaya, and M.L. Hidayetoglu. "Effects of Indoor Color on Mood and Cognitive Performance." Building and Environment. Pergamon, October 4, 2006. https://www.sciencedirect.com/science/article/abs/pii/S0360132306002289.

[28] "What Is Color Therapy, What Is It For, And Is It Right For Me?" Regain. ReGain, April 19, 2018. https://www.regain.us/advice/therapist/what-is-color-therapy-what-is-it-for-and-is-it-right-for-me/.

THEORIES & METHODS

It is essential to acknowledge that PTSD is a mental disorder. Edward Vega, a clinical psychologist at the Atlanta Veterans Affairs Medical Center, argues that the only effective treatment for PTSD is psychotherapy and that the built environment can neither cause nor cure this condition.[29] However, like pharmaceuticals, a well-designed environment has the potential to aid the caregiver in administering psychotherapy, yielding a more expedient recovery from PTSD. This Thesis is focused on designing for Sexual Assault Survivors dealing with post-traumatic stress. If executed thoughtfully, this approach could become a standard design consideration for many future developments.

In his 1996 paper, Adapting the Environment Instead of Oneself, David Kirsh introduces a concept based on the human pursuit of a higher return on investment of our physical and mental resources[30]; the premise is that a person can only improve their efficiency in one of three ways:

g. Adapt to the environment

h. Migrate to a new environment

i. Adapt the environment itself.

When considering an individual who experiences PTSD, the first two strategies are excluded as clearly inadequate options. PTSD is itself a failure to adapt to one's environment, and migrating to a location with no triggers is impossible, leaving only the third option: to optimize their surroundings for the given task of healing. It is essential to acknowledge the concept that physical and mental efforts are both expenditures of the

[29] Vega, E. (2013, August 10). Interview by M. Finn. The role of environment in post-traumatic growth.

[30] Kirsh, D. (1996). Adapting the environment instead of oneself.

same energy. If space can contribute to lessening the burden of healing from a psychological wound, it also frees up resources for the body to use elsewhere, possibly by the immune system or other cognitive processes. In his paper, Kirsh coins the term cognitive congeniality, which he defines as a measure of how cognitively hospitable an environment may be.[29] A building's purpose is to serve as the backdrop for activities, not the activity itself. When we are wounded, we go to the hospital not because being inside the hospital heals us, but because that is where we receive treatment from caregivers and their well-accommodated tools. Take, for example, a person ailing from the flu, seeking a diagnosis and treatment plan. On the premise that cognitive and physical expenditures consume the same essential energy, we could argue they would benefit from well-designed signage directing them from the parking lot to their doctor's office. Not expending energy on the emotional stress of losing their way has left more resources available to increase their capacity to heal.

Imaginative empathy is one of the most powerful tools available to architects and designers.[31] This empathy is critically needed in the design of behavioral health treatment centers. PTSD is cruel in that it does not discriminate in whom it affects, but the challenges that are unique to sexual assault survivors are the cause of the Trauma.[32] There are activities and events in our lives that, if we so choose to participate in them, there is an innate set of factors pre-determined that are known to cause PTSD. This does not apply to all Trauma but mostly to the ones that have the highest rates of PTSD. For example, a veteran volunteered for service, knowing the risk. Moreover, both the

[31] "Designing for Invisible Injuries: An Exploration of Healing Environments for Post-traumatic Stress." AIA. Accessed April 10, 2019. https://www.aia.org/pages/22356-designing-for-invisible-injuries-an-explorat?tools=true.
[32] Norman, D. (2011) Managing Complexity. Living with Complexity (1st ed). Cambridge, MA, USA: The MIT Press

general public and the law has attempted to apply this same logic to SAS. Insinuating that a young woman should know that going out to a bar or party, wearing anything about very modest clothing, would pre-qualify her for sexual assault. But the reality is that this is a very narrow view. As previously stated, a majority of SAS experienced Trauma in familiar places, mostly their homes. The truth is that this Trauma, with some of the highest rates of PTSD, occur without any sort of pre-described risk. And this shatters an overarching sense of trust and security in any realm.

Because of this, environmental analysis and research are essential. Between precedent studies and the aforementioned existing typologies for PTSD treatment, a strong vision can be gathered in order to inform the design of the center proposed. Synthesizing site experience, climate, and cognitive relationships to architectural form, we can create an analysis exploring the environmental variables that could uniquely contribute to a therapeutic healing environment.

It is important to analyze the environment as a SAS might. The following passage is from a SAS who survived months of sexual assault.

> "In my mind, I built stairways. At the end of the stairways, I imagined rooms. These were high, airy places with big windows and a cool breeze moving through. I imagined one room opening brightly onto another room until I'd built a house, a place with hallways and more staircases. I built many houses, one after another, and those gave rise to a city -- a calm, sparkling city near the ocean, a place like Vancouver. I put myself there, and that's where I lived, in the wide-open sky of my mind. I made friends and read books and went running on a footpath in a jewel-green park along the harbor. I ate pancakes drizzled in syrup and took baths

and watched sunlight pour through trees. This wasn't longing, and it wasn't insanity. It was relief. It got me through.[33]"

What is revealed to us in this passage is that there is a simple desire for a comfortable familiarity. Sunlight, a breeze, and rooms with designated purpose provide a core of stability. Combining this broad understanding, the informed design will utilize imaginative empathy to establish a place for healing.

[33] Lindhout, Amanda, and Sara Corbett. *A House in the Sky: A Memoir of a Kidnapping That Changed Everything*. London: Penguin Books, 2014.

PRECENDENT STUDIES: CRISIS CENTER

Crisis Center in Tel Aviv-Yafo, Israel
Architects: Amos Goldreich Architecture, Jacob Yaniv Architects
Year: 2018

Figure 7. Photo of Crisis Center by Amit Geron

Crisis centers are typically developed to aid a woman or a woman and her family escaping an abusive environment. They aim to provide shelter, security, and transitional services. This particular design was developed through consultation with the group who would run and work the center. Aesthetically, it was designed to mimic the way in which women and their families would escape into a cave of a mountain – hence the stone facades (fig. 7).

Since the program of a crisis center differs greatly from the proposed Sexual Assault Survivor Center, the main goal of this particular case study is to understand what different steps need to be taken in order to properly differentiate the design.

Figure 8. Floor plan of Tel Aviv Crisis Center. https://www.archdaily.com/894042/shelter-for-victims-of-domestic-violence-amos-goldreich-architecture-plus-jacobs-yaniv-architects

The noticeable benefits of the floor plan are in the security of the perimeter of the facility, creating centralized, protected common space in the middle of the space (fig. 8). The courtyard green space provides the calming and contemplative aspects of nature and visibility from all living spaces into this central public space (fig. 9). The staggering of the living units helps to break up potential monotony and provides a sense of uniqueness to each unit. All private spaces orient towards the administrative and common spaces located at the north west corner of the facility.

Figure 9. Photo of Tel Aviv Crisis Center by Amit Geron.

Where the design fails for use as a Trauma center is primarily in the sharp angles of the design and the many hidden corners and spaces. As previously noted, those suffering from PTSD find these spatial conditions to invoke anxiety. Though the low percentage of openings is most likely due to climate-based demands, the minimal daylighting in a majority of the facility also proves to be lacking. Additionally, the overall coldness in the aesthetics, particularly of the interior, suggests a lack of concern beyond the simple need for living space and a corridor. Infiltrating color and art would do a lot to improve the conditions of the

space, especially for any young, developing minds occupying it.

These downfalls in the design are common even in less highly designed crisis centers. The common complaint being that the cold and sterile style mimics that of a hospital, leading to a feeling of dehumanization.

PRECENDENT STUDIES: TRAUMA CENTER

Veteran's Center for Ocean Therapy
Architects: Washington University Graduate Design Studio

Figure 10 Center for Ocean Therapy Concept. Image credit: Alexandra Ward

In the development of this design, the program was mediated through thorough analysis of the site and its relation to the Trauma triggering factors affecting Veterans with PTSD. One of the largest and unique factors for veterans is sound. Therefore, an analysis of sound pollution was used to address challenges at the chosen sit (fig. 11)

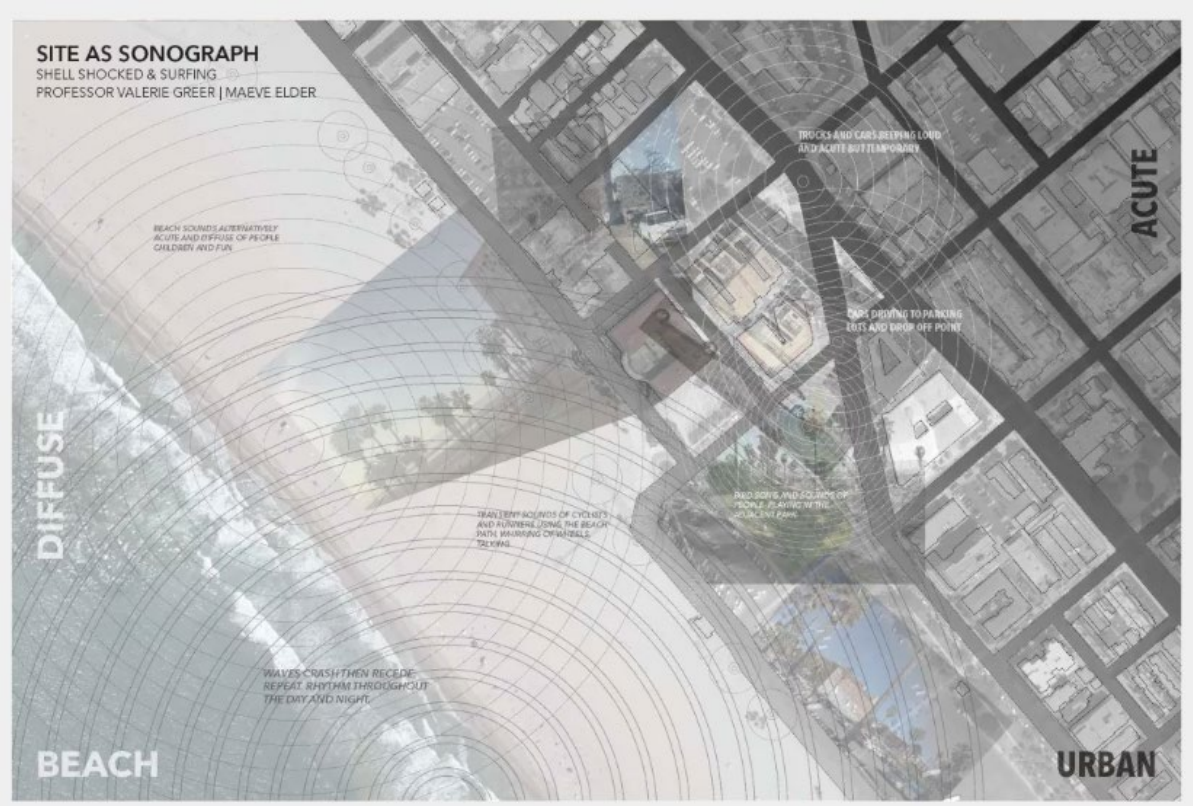


Figure 11. Center for Ocean Therapy, Site. Image credit: Maeve Elder

Diagrammatically, they were able to represent the areas of acute noise pollution in contrast to areas where diffusing white noise could potentially mediate the affect.

Considering the urban setting, the took advantage of the need to vertical massing in order to create spacial separations in terms of use and designated activity. Pairing this with the need for transparency, sight lines, and an orientation towards the diffusing white noise from the beach and ocean vista to the south east, a well plotted design was proposed. Color, light, and nature was all accounted for and celebrated through well considered transitions(fig.12).

Figure 12. Center for Ocean Therapy Concept. Image credit: Kuai Yu

SITE SELECTION AND ANALYSIS

The prototype design will be set in Rochester, NY. The largest factor when considering a site for the center prototype is demographics. As previous data suggests, sexual assault does not truly discriminate and affects all ages, ethnicities, economics, and regions. Therefore, accessibility is a key issue, and preference must be in favor towards those with the least means of access (fig. 13) Through the following considerations, 360 E Broad St. was chosen as the ideal site for development with a total of 1.34 acres of existing parking lot (fig 14). As previously noted, the largest age group with reported sexual assault cases is the 18-34 range. These ages are primarily made up of college students and young professionals. Thus, placing a facility in good proximity and access to where a majority of this age group resides will be beneficial. The south east quadrant of the city homes a large portion of this age group (fig. 15) and represents a fairly even variety in income (fig. 16).

The site should exist in an area of the city that provides a variety of services while also catering to mixed-use development. Where there is adequate residential, commercial, and public development, there is typically an increase in accessibility and demand for services. The eastern portion of the old inner loop is currently under re-development to home more mixed-use services while complementing the already existing museums, theaters, and coffee shops that fill the area (fig. 17).

A site that is not entirely locked by surrounding buildings will be ideal to reduce feelings of being trapped or closed in. This will also mean more possibilities of natural lite infiltration. So, the optimum location will see open space to the south of site, since the sun dominates the southern hemisphere at this location. Following a trend, in the south eastern side of downtown Rochester, just west of the new inner loop development, is a site that opens southernly to fairly open space.

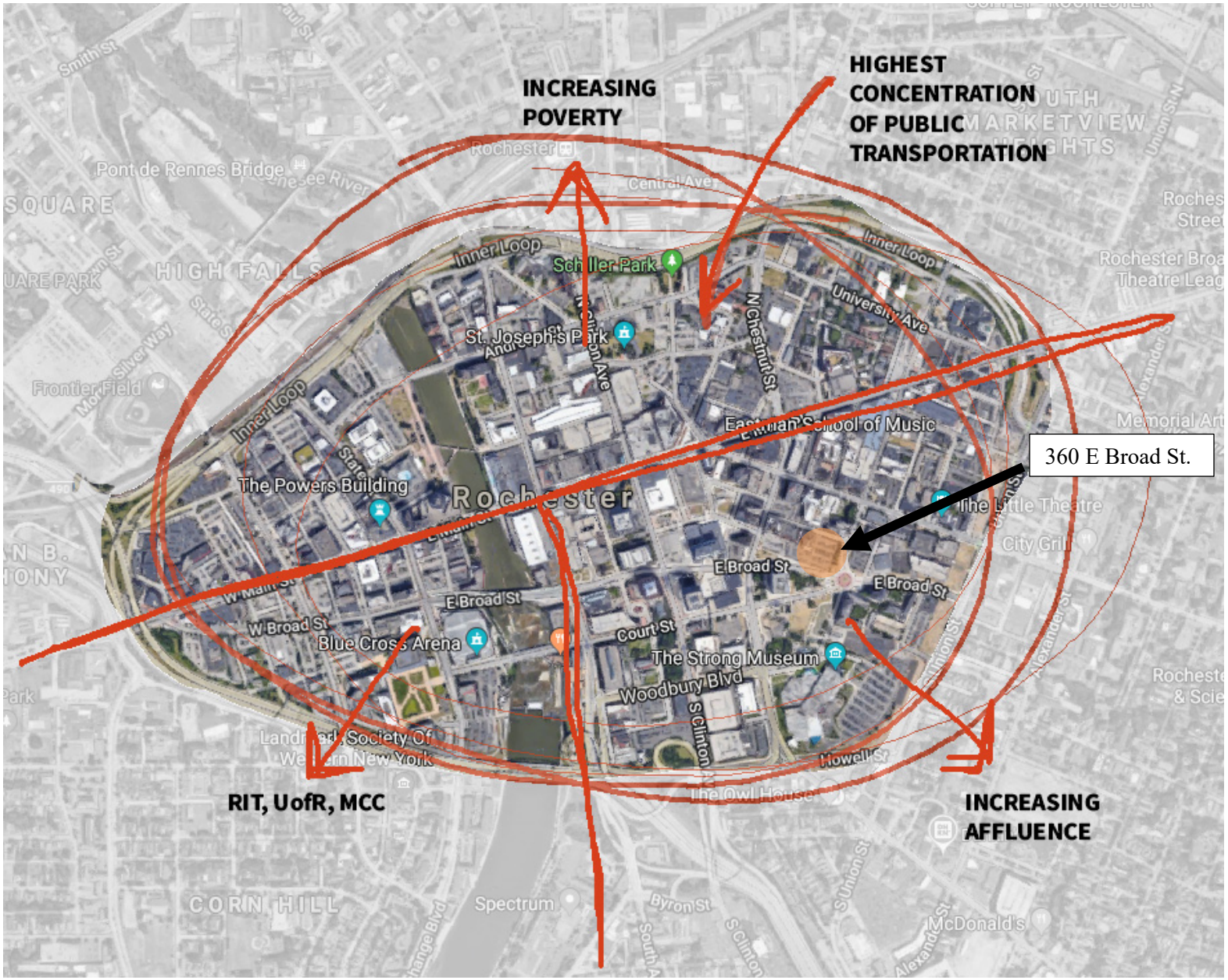


Figure 13. Site access analysis

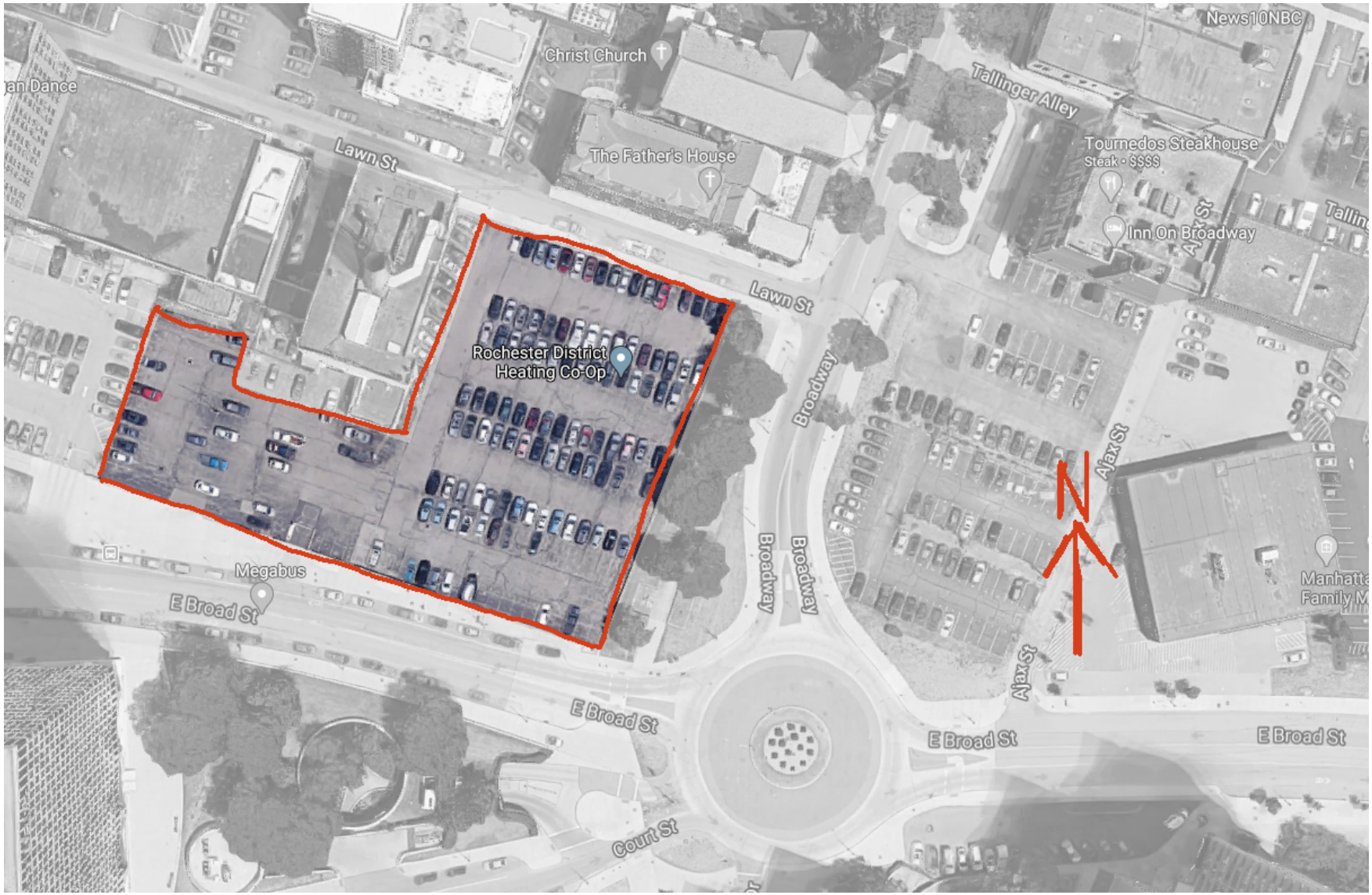


Figure 14. Site Location

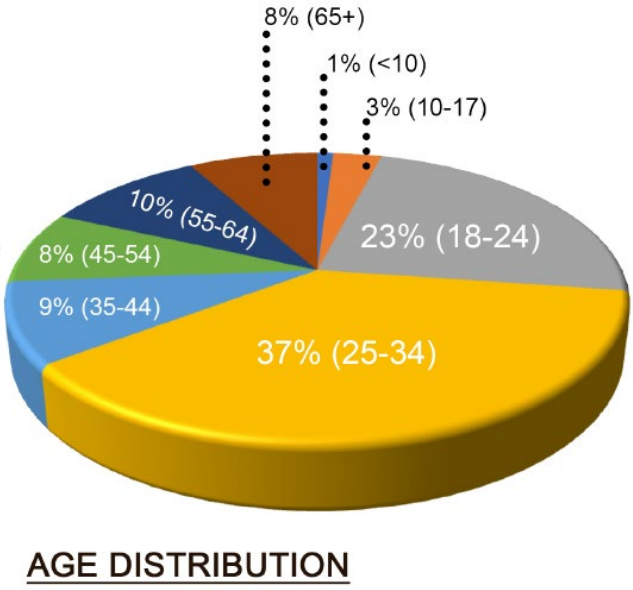


Figure 15. Age Distribution chart

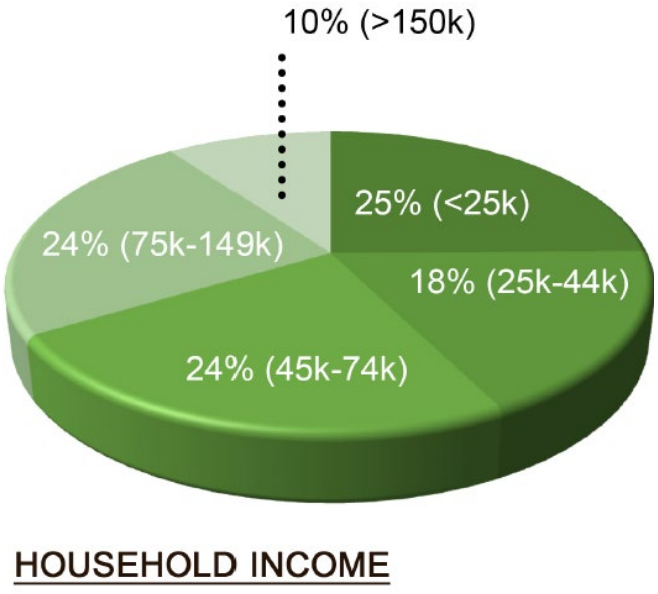


Figure 16. Income Distribution Chart

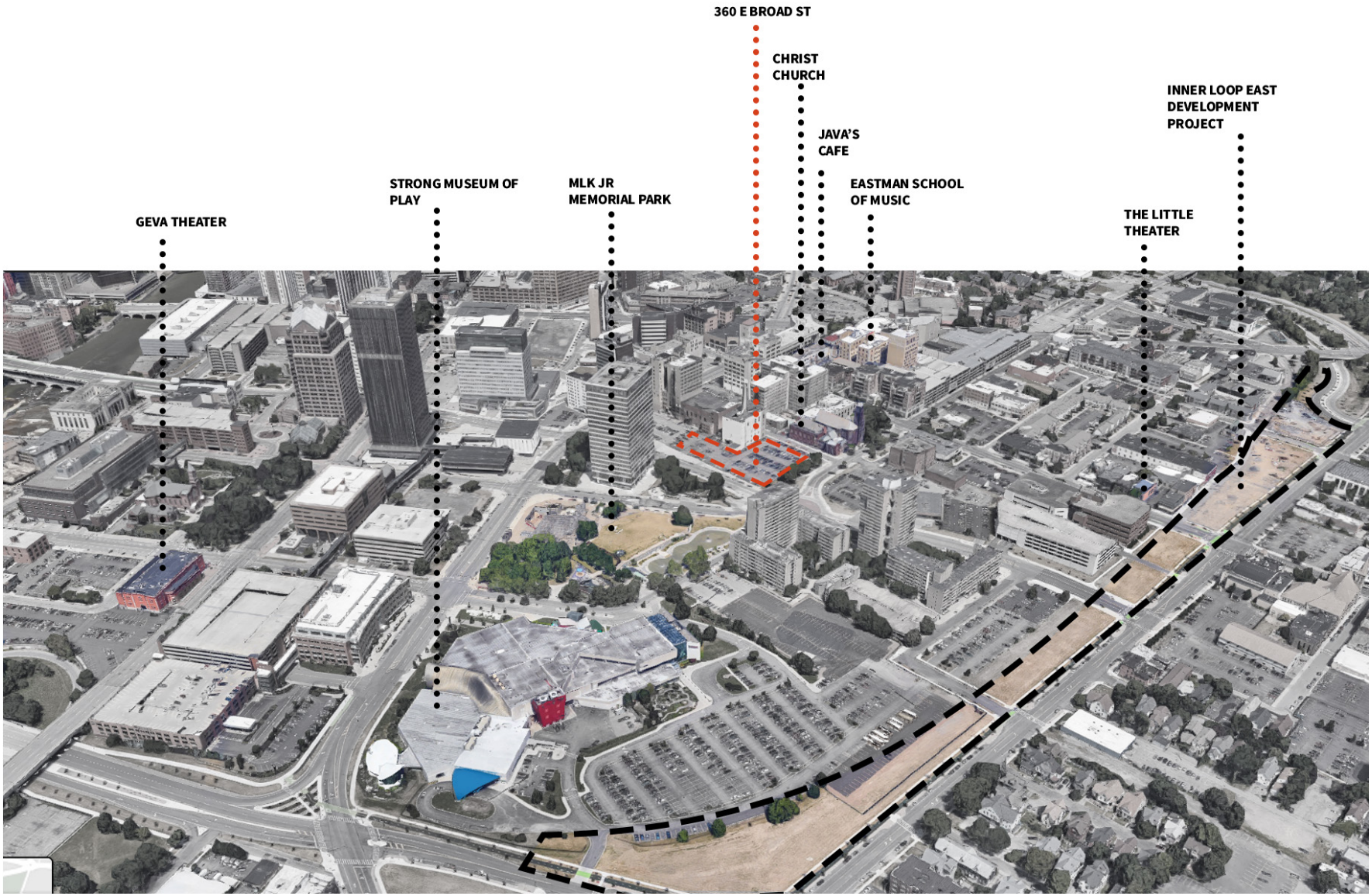


Figure 17. Site: Local amenities

A light study of the massing surrounding the site was done to better understand when the site would be exposed to natural light and when it would be covered in shadow. The summer solstice, winter solstice, and the equinoxes were observed at 9am, noon, and 5pm (4pm for winter). This study revealed the expected fact that the site would in shadow in the winter mornings and evenings. The evening shadow cast was the most influential due to the large tower to the south west of the site.

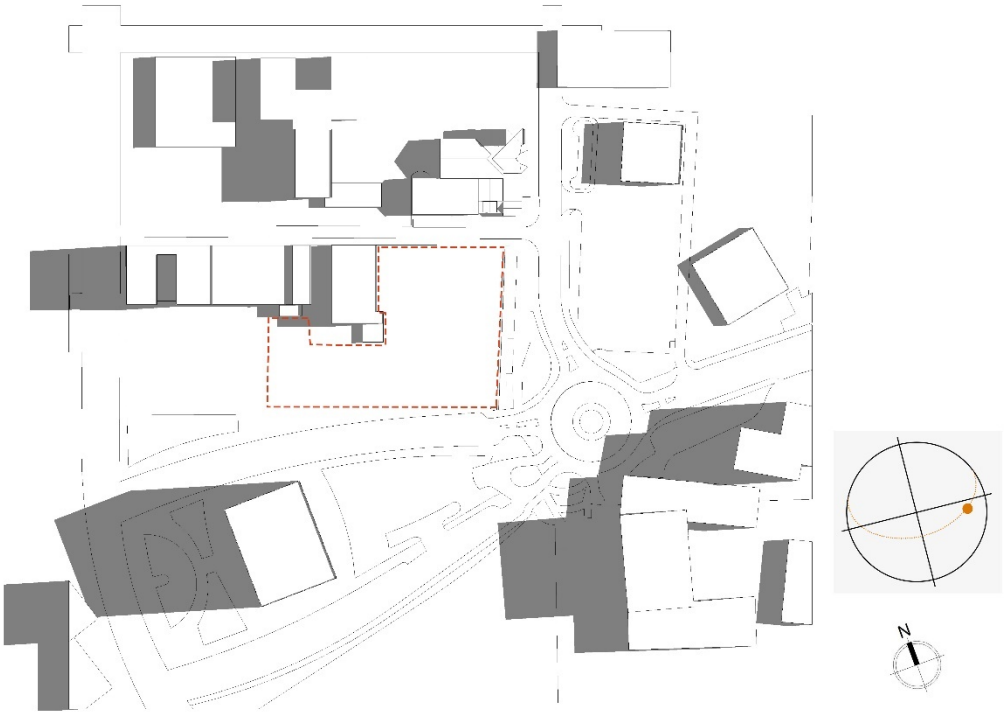


Figure 18. Summer Solstice Sun and shadow at 9am.

Figure 19. Summer Solstice Sun and shadow at 12pm.

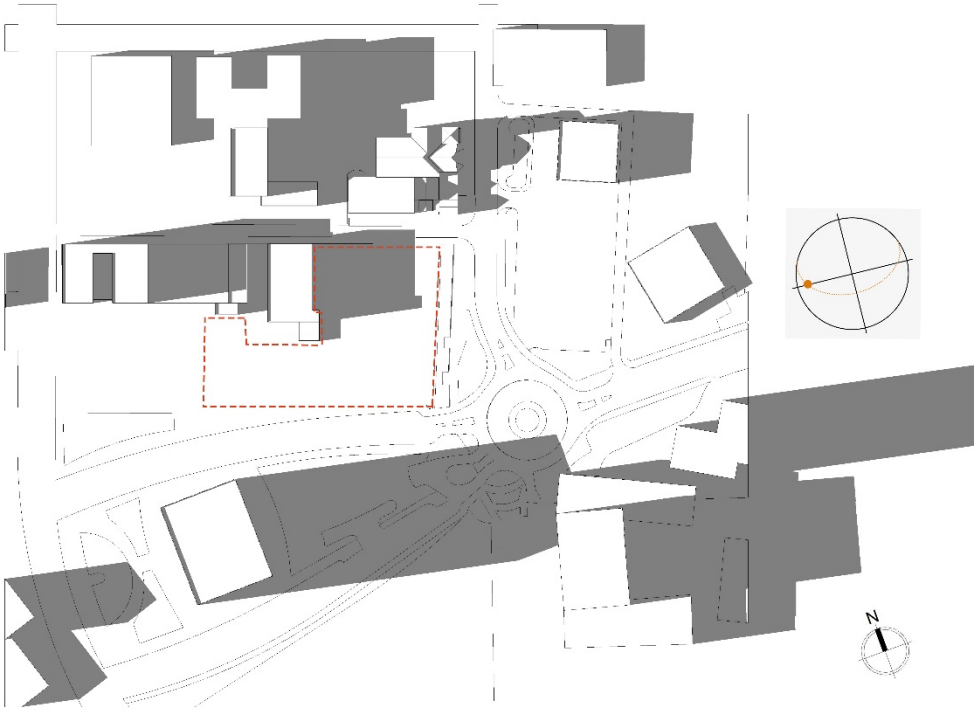


Figure 20. Summer Solstice Sun and shadow at 5pm.

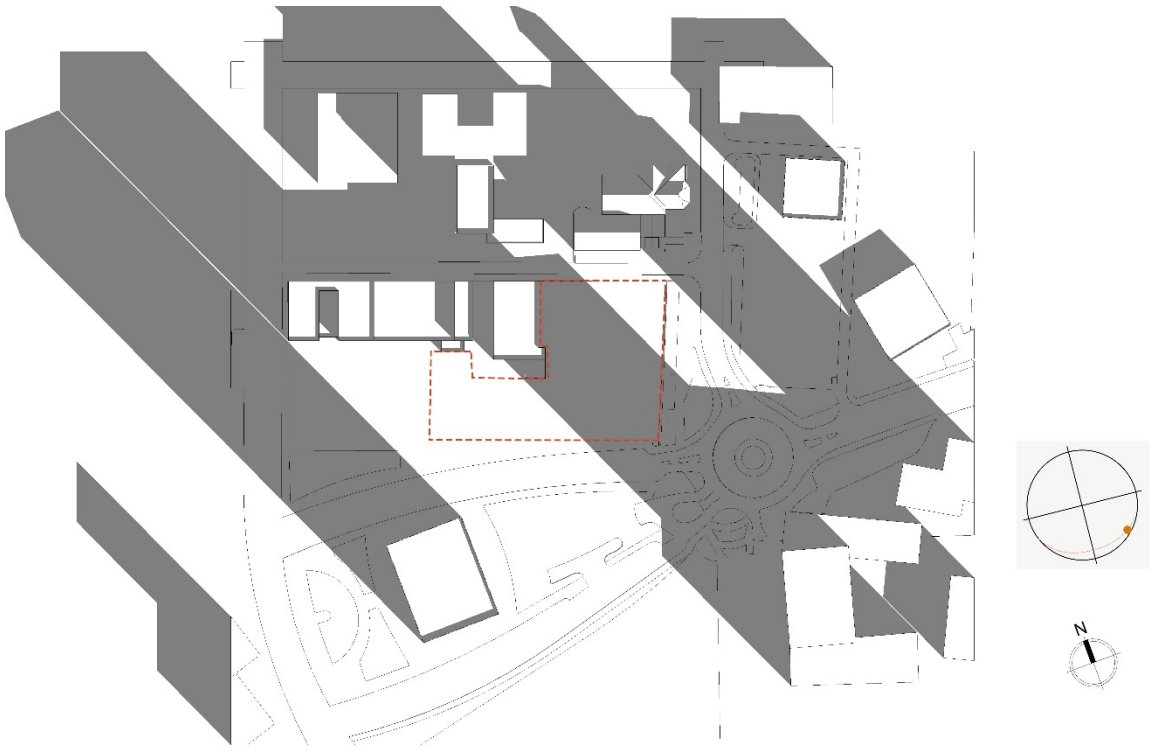


Figure 21. Winter Solstice Sun and shadow at 9am.

Figure 22. Winter Solstice Sun and shadow at 12pm.

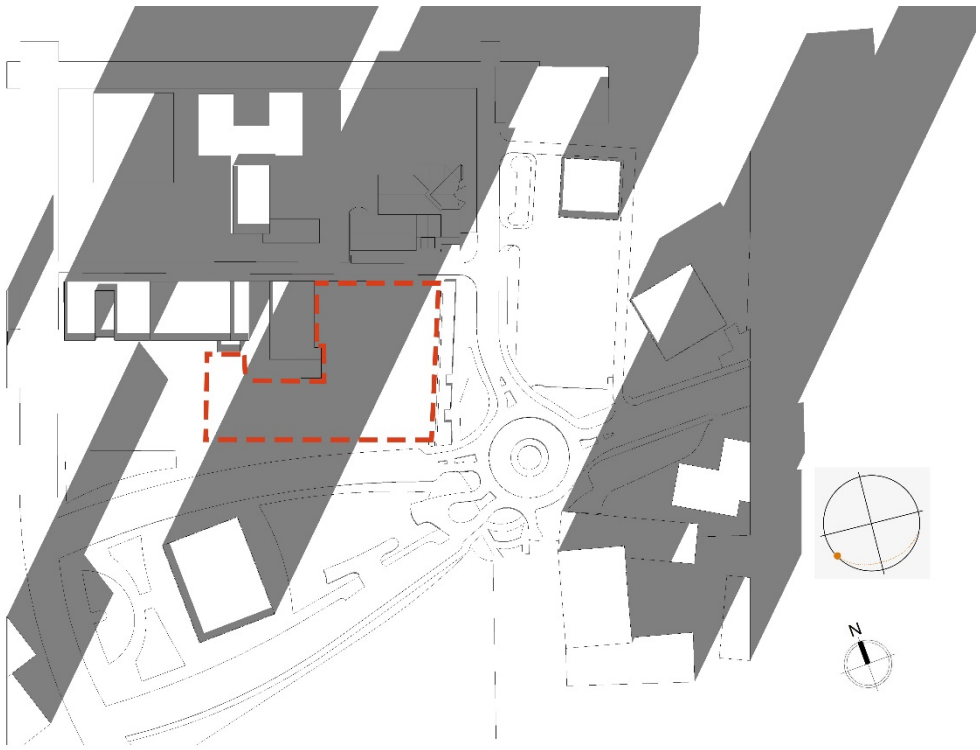


Figure 23. Winter Solstice Sun and shadow at 12pm.

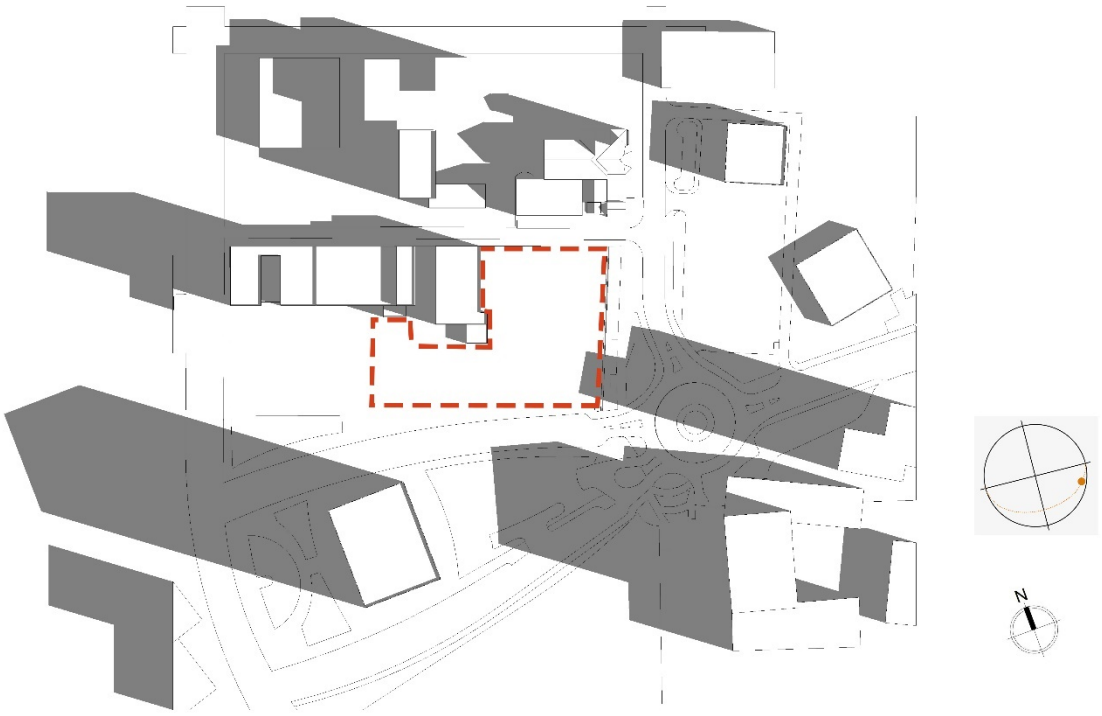


Figure 24. Vernal and Autumnal Equinox Sun and shadow at 9am.

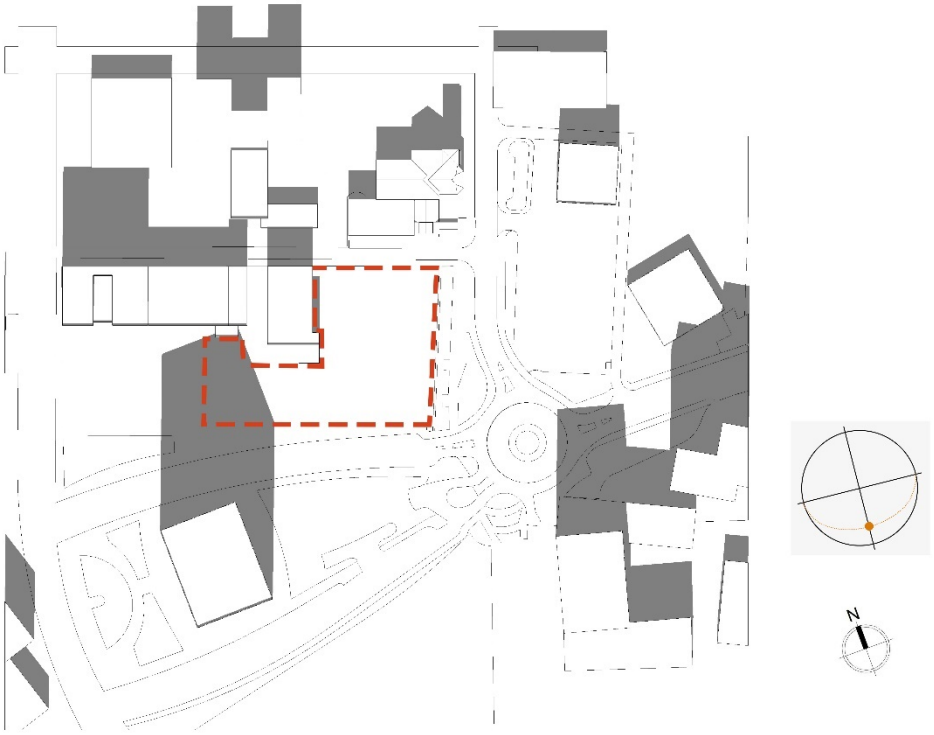


Figure 25. Vernal and Autumnal Equinox Sun and shadow at 12pm.

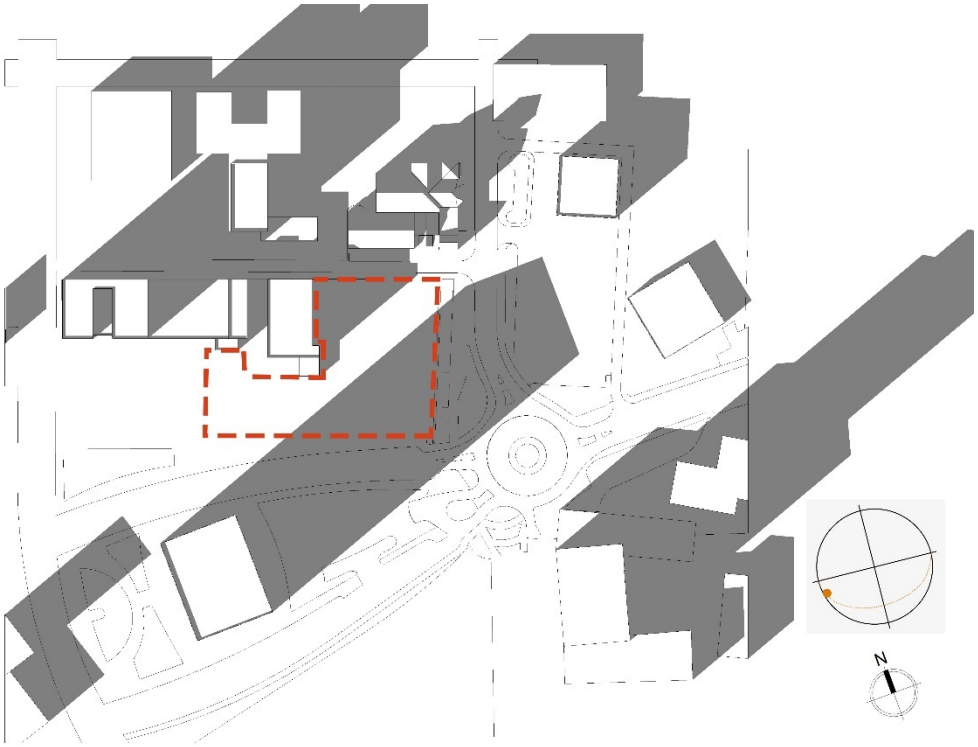


Figure 26. Vernal and Autumnal Equinox Sun and shadow at 5pm.

A solar and wind study of the site revealed a few challenges in the design (fig. 27). Though the southerly facing site is beneficial for daylighting, it may also pose a problem with solar heat gain in the summer months. But this heat gain would be beneficial in the winter. The strong westerly winds could potentially create a wind tunnel affect on the site. Massing will need to respond to this.

Security, transparency, and privacy are a key concern in the design. Vehicle and foot traffic could prove to be very influential in the adaptation of the design to the site. There needs to be respect for the occupants' wishes to enter into a secure main entry but there also needs to be a visibility aspect that limits a sense of entrapment. Analyzing the traffic levels of vehicles and pedestrians helps to determine the most opportune point of entry.

As a result, it was determined that Lawn St. to the north of the site, though with little traffic, would not be ideal for a main entry. This area in particular feels more like an alley rather than a main street. Approaching directly from the east due to the fact that the area of greenery that resides there is not a part of the site. The neighboring building to the west, is the Rochester Heating Co-op with a loading dock at its southern façade facing into the parking lot. The most ideal location, through process of elimination, is the south east corner of the site. The existing greenery provides some privacy and E Broad St to the south allows easy access and easy visibility from an entry looking out and observing those that enter.

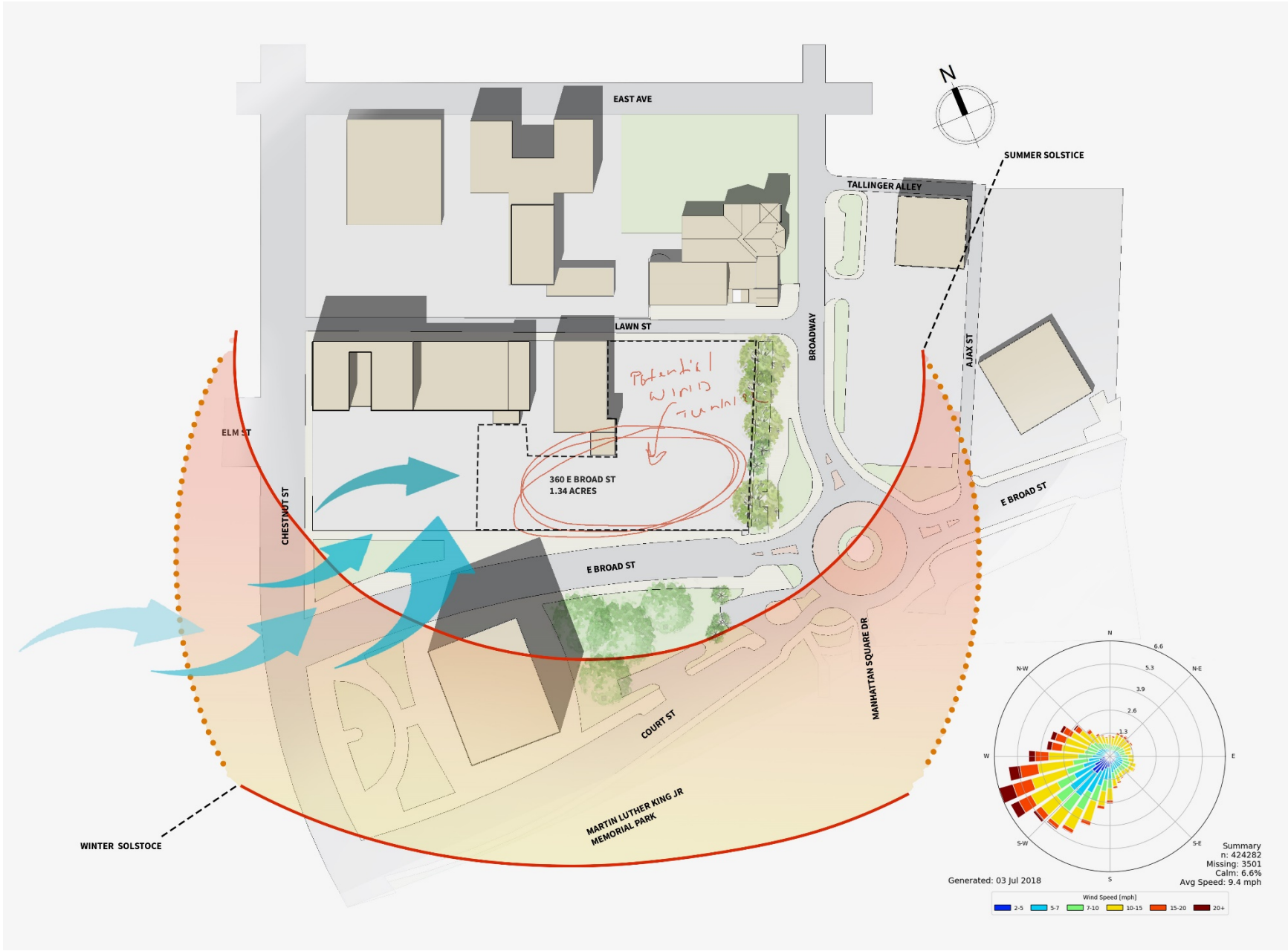


Figure 27. Site solar and wind study

PROGRAMMING

A key concept in the treatment and maintenance of Trauma symptoms and PTSD, is the practice of holistic healing (fig. 28). This model of therapy takes on the trifecta of mind, body and spirit. Combing this healing model with the six stages of recovery (fig. 3) will help to define the programming of services for this center.

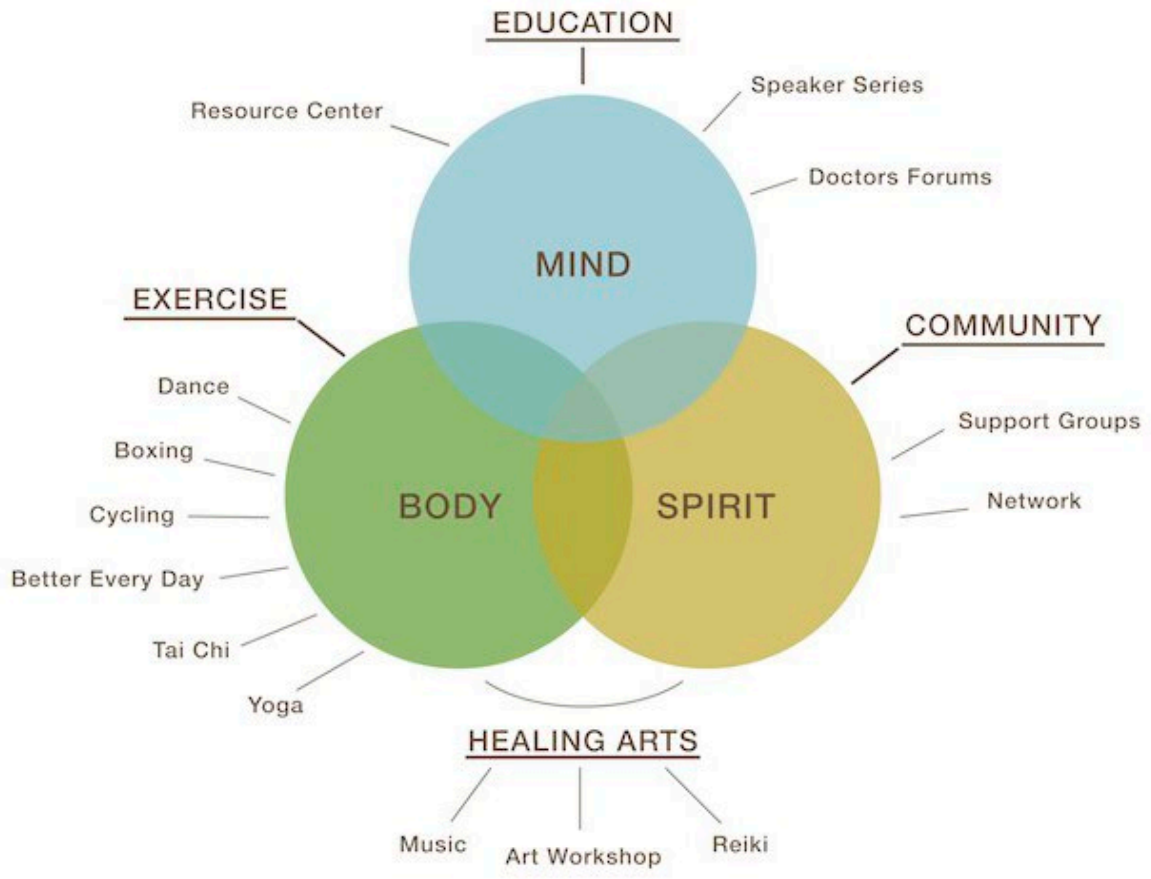


Figure 28. Healing Model

The six stages of recovery are used in a method of maintenance for this Trauma center, with attempts to apply mind, body, and spirit to all stages (fig. 29 & fig. 30).

Establishing the services of the center is based upon recognized tools in helping those suffering from Trauma and the holistic approach of such services.

List of spaces necessary:

- Main Entry/Lobby
    - Secure entry
    - Waiting room
- Consultation offices
- Workout/Gym Facilities
    - Locker room
    - Shower
    - Gym classrooms
- Classrooms/workshops
- Computer lab
- Open study/work space
- Private study/work space
- Greenhouse

Initial attempts were made to segregate these services based upon level, but the idea of connection and transparency is paramount in the programming (fig. 31). These ideals allow a constant exposure to all aspects of healing for the user, moving away from a notion that levels might imply success or lack thereof. Is a user of the facility prefers to use only one aspect of the services provided, it should be easily achievable and easily visible.

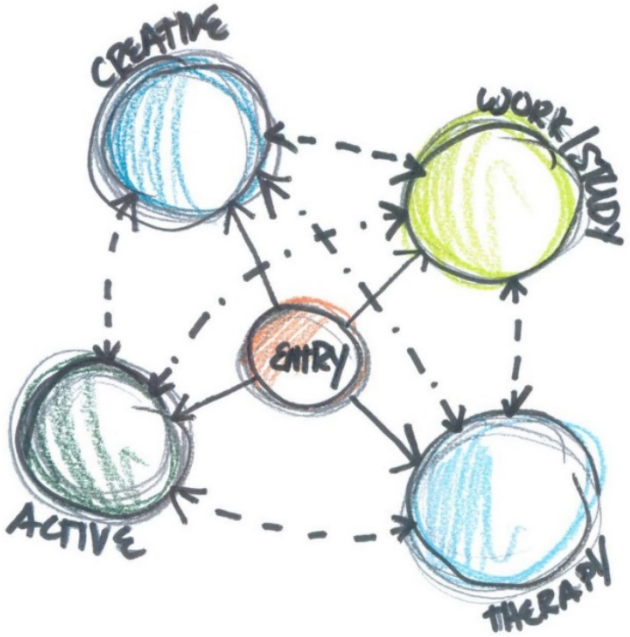


Figure 29. Space connection Figure

30. Steps of recovery related to space

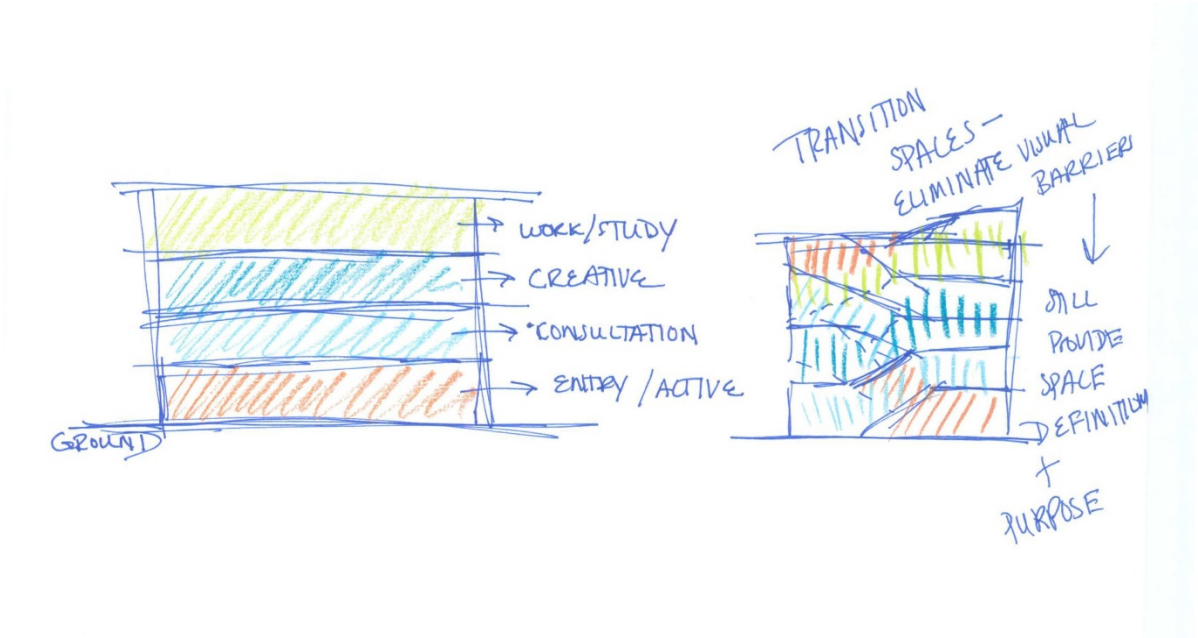


Figure 31. Space division to space integration.

Moving into spacial programming, previous notes on color design and therapy affect the color coding of each space. Colors are defined as follows:

- Red – physical activity
- Yellow – Personal development
- Green – balance and contemplation
- Blue – relaxation and discovery
- Grey – neutral space

Addressing the first level of the center, all colors are used, focusing on elements of action. Action in physical activity, action in mental healing, and action in interaction, are met with a balance of green space to connect all spaces together (fig. 31).

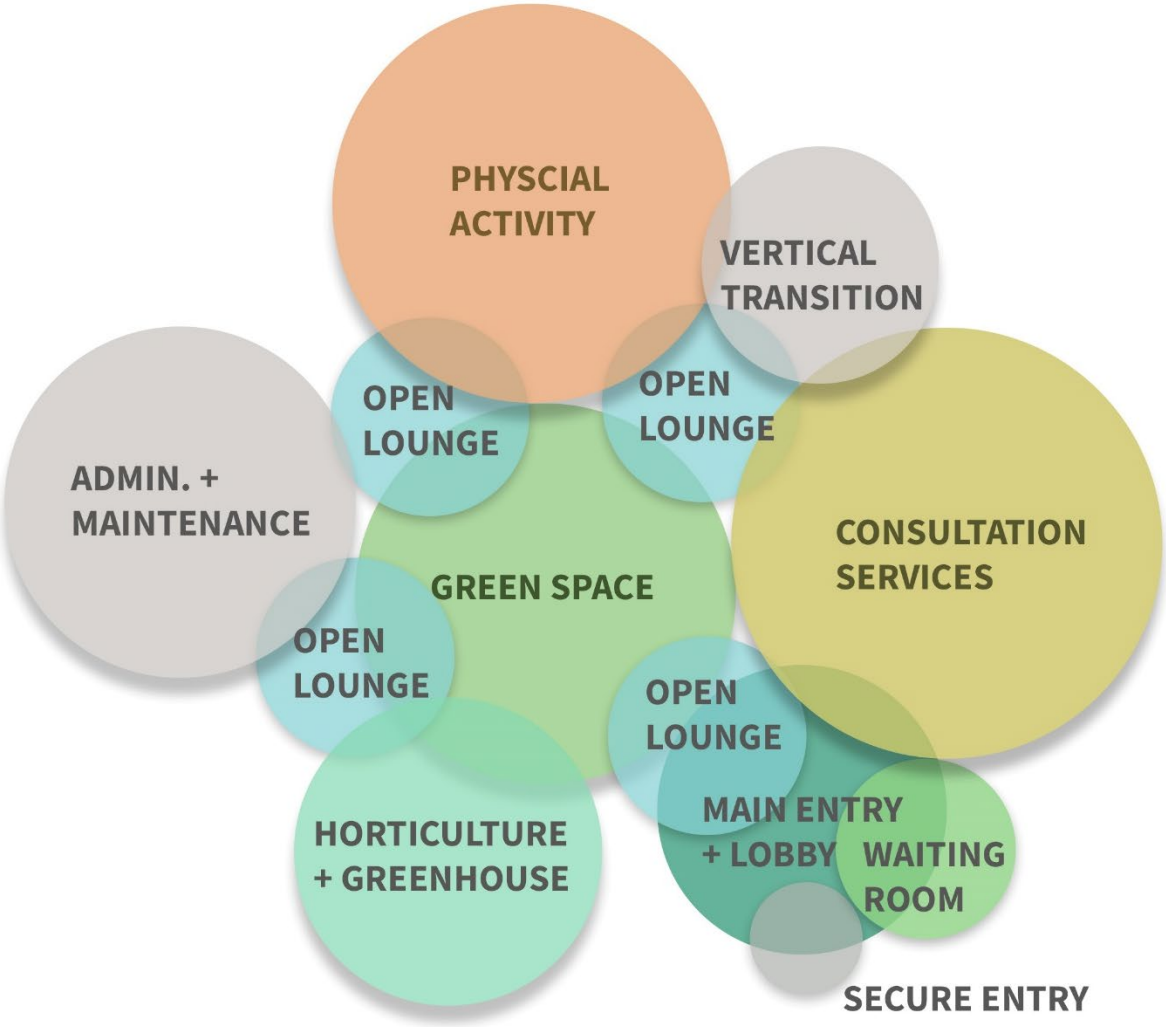


Figure 32. First level programming bubble diagram.

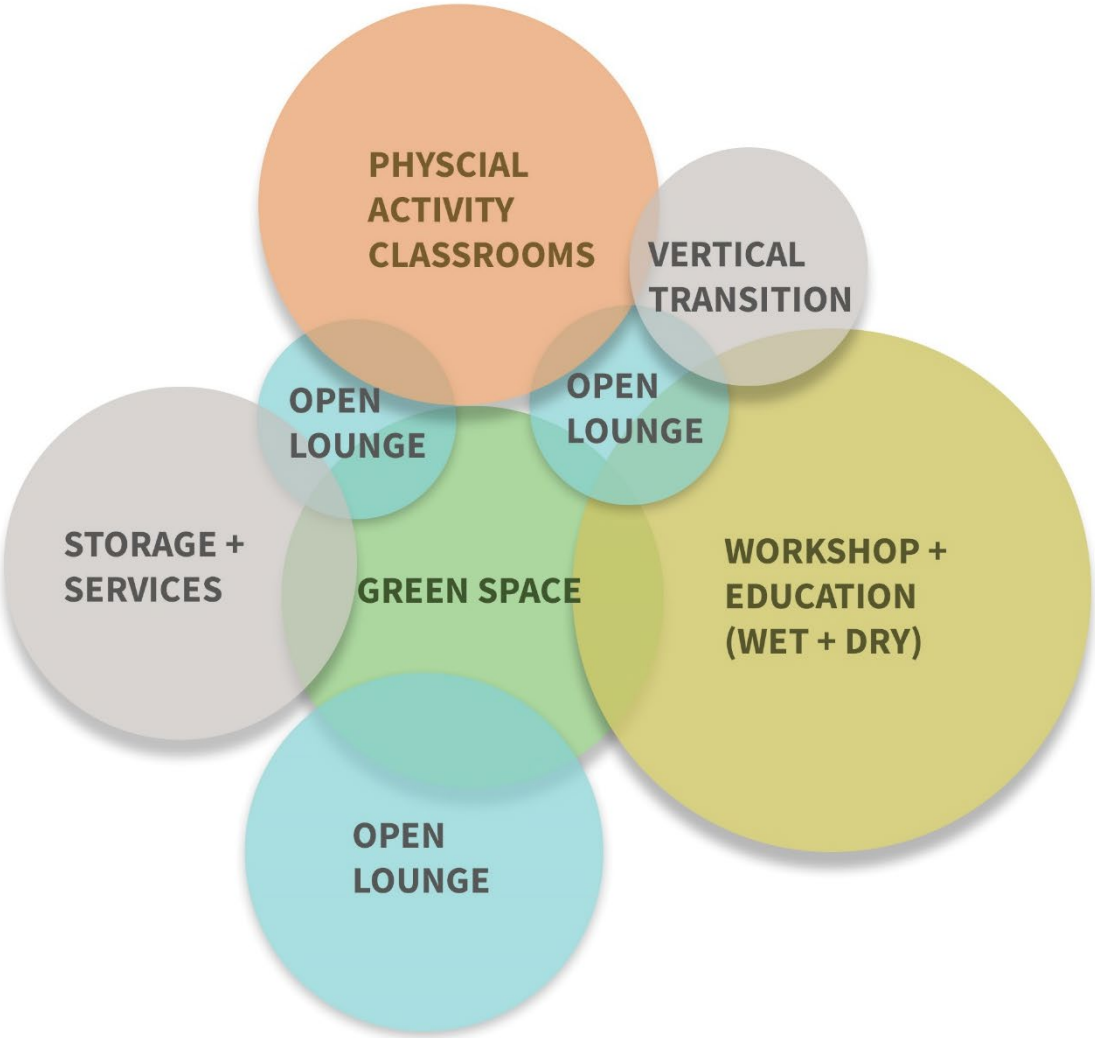


Figure 33. Second level programming bubble diagram.

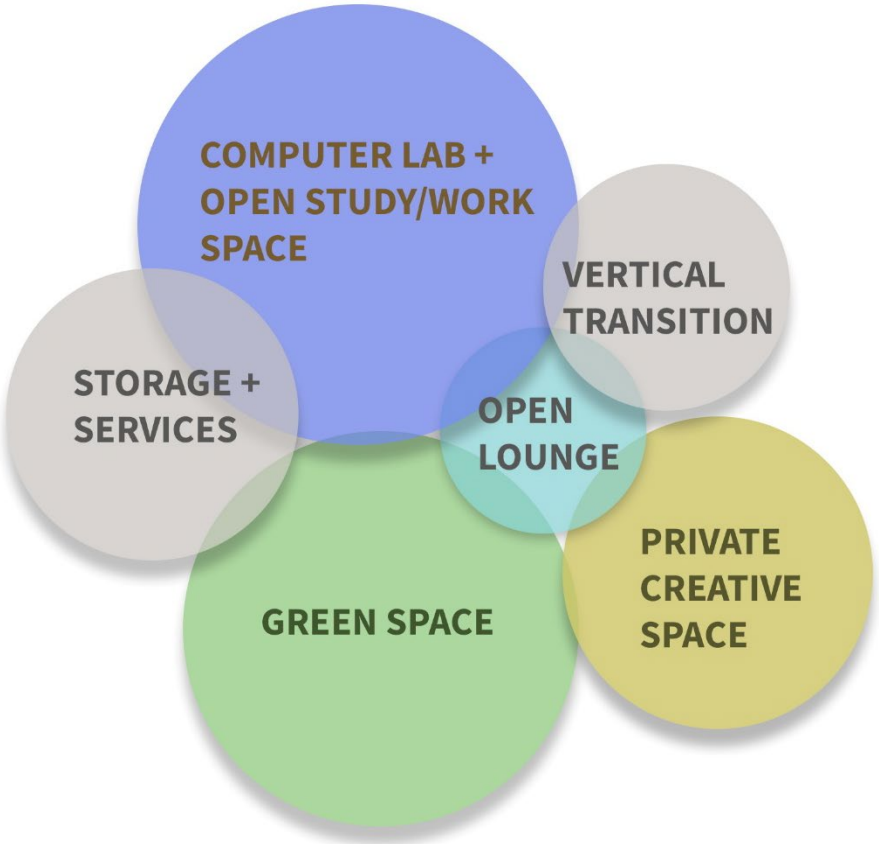


Figure 34. Third level programming bubble diagram.

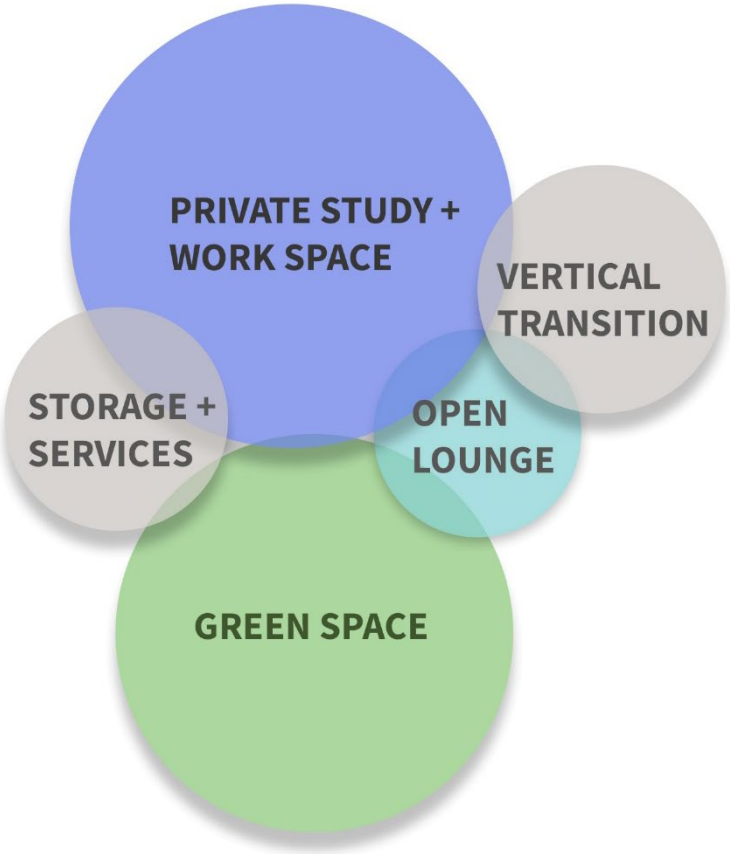


Figure 35. Fourth level programming bubble diagram

Throughout the development of the diagrams, the central green space was focused upon as an epicenter of the design. This allows all interiors to look into this space and provides more privacy along the perimeter of the building.

The leveling of the Trauma center is circumstantial and based upon an urban setting. But the benefits of vertical separation will help create clearer programming and separations of spaces for their intended uses. This is especially important when considering the need for privacy and quiet when social interaction is too over whelming for an individual. Naturally, most potential of communal interaction will occur on the first level where entry is gained and where dialy therapy sessions are provided. Having privacy increase as the occupant rises levels in the center will be a natural transition.

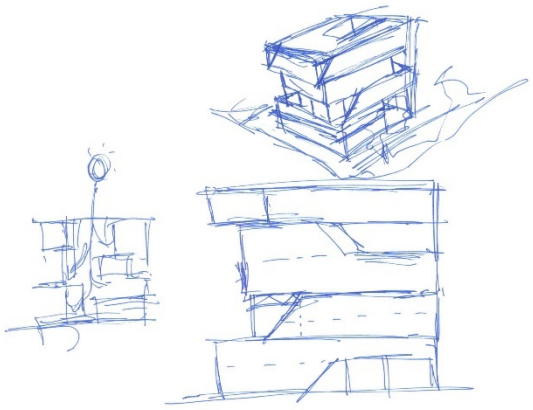
Taking advantage of open lounge spaces will be beneficial when setting up community events or possible gallery types showings of works achieved but members of the center. It's important to place the spaces as destination spots. Areas that can easily be encountered through wayfinding and be considered almost as landing spots for an occupant.

The transitional space needs of this facility will be noticably more volumenous in comparision to typcial designs. As noted in the literature review, those suffering from PTSD find that crowded and narrow hallways or corridors cause anxiety. Survivors prefer spaces that are open and provide ample distance between occupants. This openess allows occupants to make the choice to interact or not. It also provides additional security, giving the individual a larger field of view.

MASSING

The next step in the design is to combine the site analysis and programming to inform general concepts for massing of the Trauma center. The key considerations are as follows:

- Daylighting
- Main entry location
- Wind
- Green space
- Curved and organic forms



The first step was to establish overall footprint and height. Tiering the facility will help to bring light into as many areas as possible, avoiding dark building centers. This tiering would have to decrease in height to the south (fig. 36). After establishing this, curves were added to the form to represent the ideal design through programming, research, and the wind analysis. Having these major curves face towards the westerly winds will help to break the wind movement as it hits the site (fig. 37). As the mass moved into its final stages, it began to break up from its solid and heavy form. An interior courtyard was placed centrally, allowing the forms to move and rise around in an organic nature. The main entry to the south east of the facility is at a 90-degree angle, marking it clearly as an entry(fig. 38).. Signage, landscaping, and lighting will be utilized to soften this harsh corner.

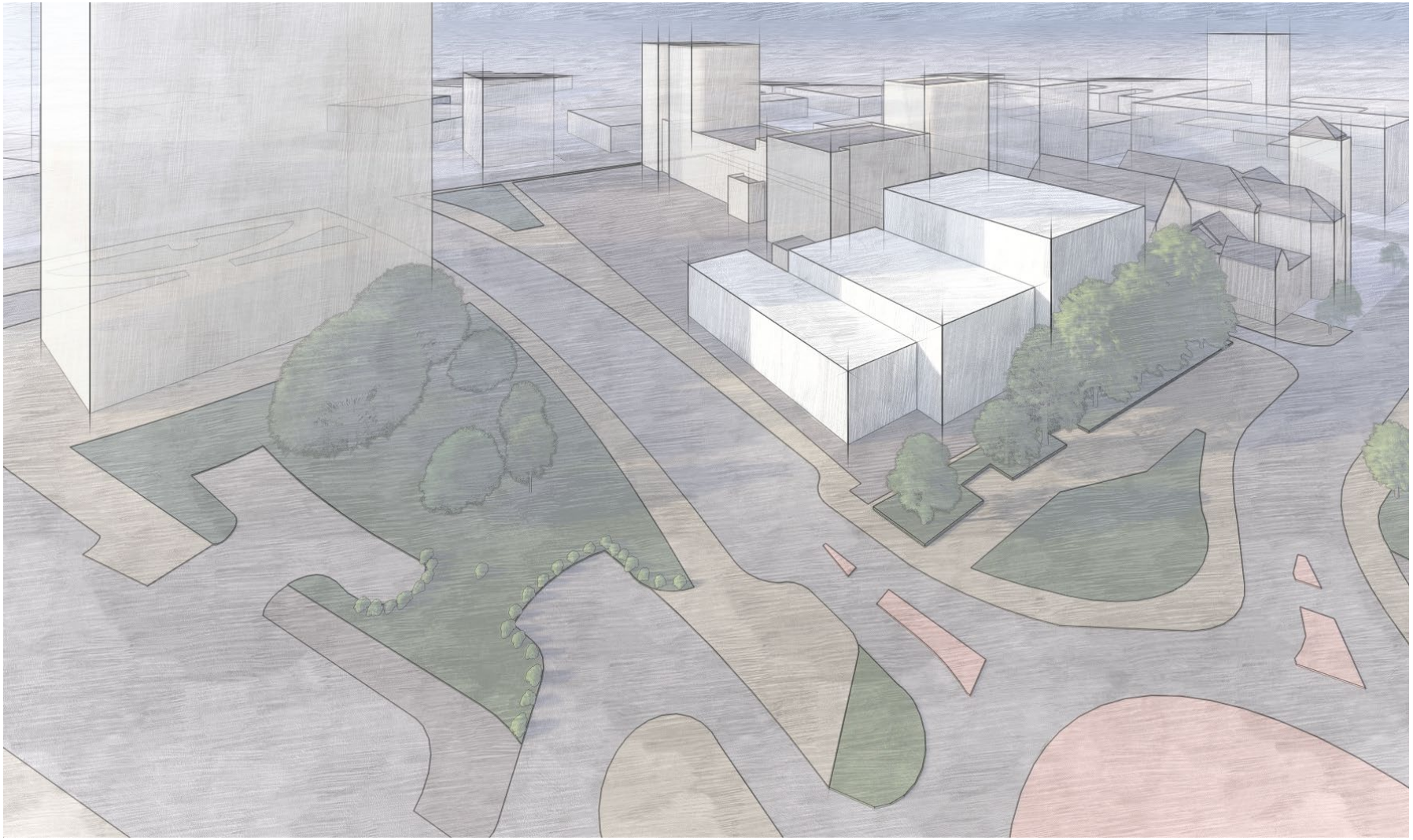


Figure 36. Massing design 1

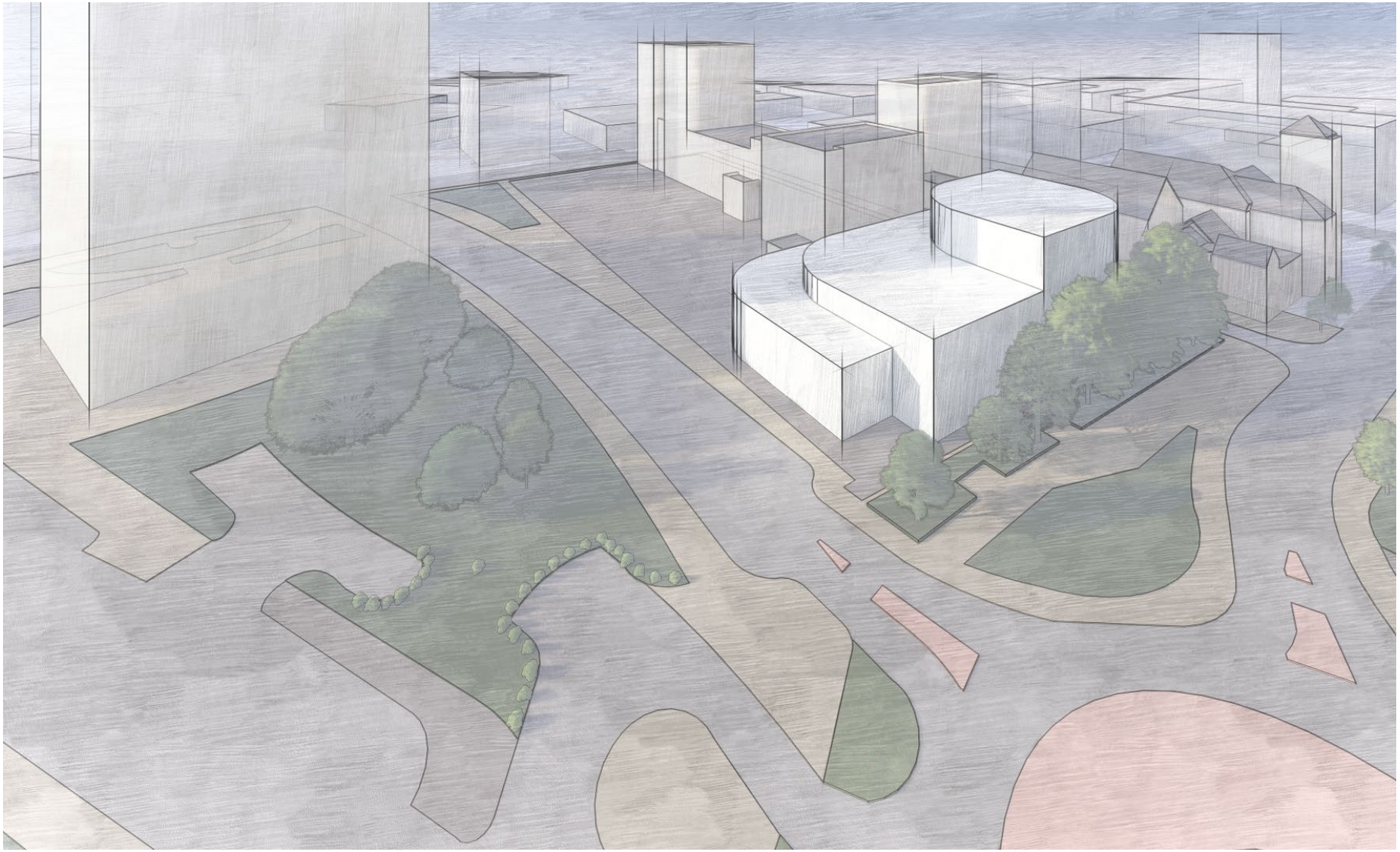


Figure 37. Massing design 2

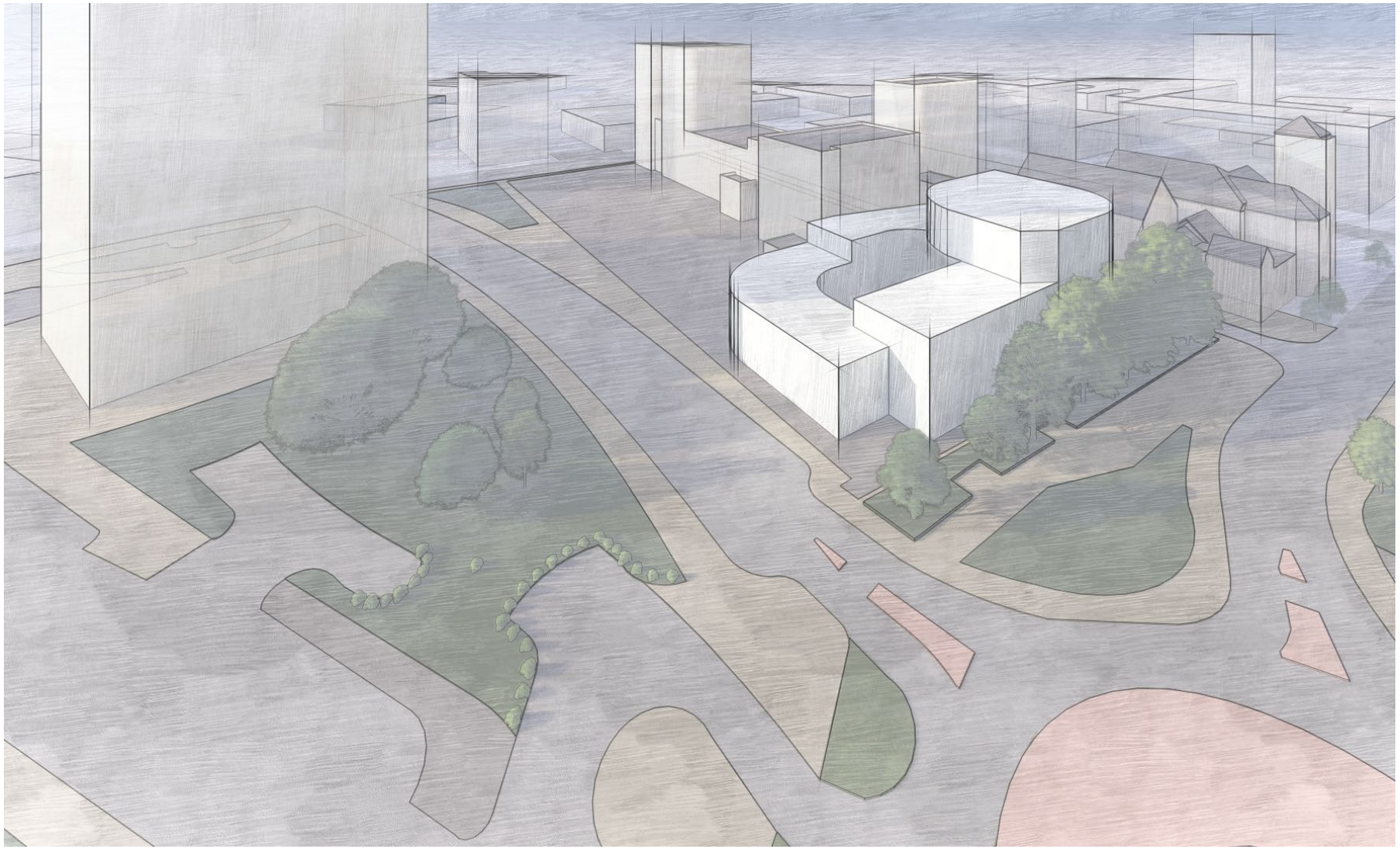


Figure 38. Massing design 3

DESIGN

The biggest challenge in approaching this design is knowing that it works against what is typically provided to Survivors of Sexual Assault. For the general communities, those that treat SAS, and the survivors themselves, the concept of creating a space that is highly visible to the general public could be risky. Typically, sexual assault and the daily struggle the survivors endure is done so quietly and out of view. The goal of this design is to make the struggle known and acknowledged while simultaneously respecting the privacy of those who would benefit from it. Finding a balance between transparency and privacy is a challenge but essential. The following floor plans will reflect the findings through site analysis, programming, and massing.

First, the site around the building needed to be addressed. With the surrounding parking lots and buildings, the functions of existing businesses had to be considered and respected, hence the limiting of the building footprint to a particular portion of the site so as not to block vehicle and loading dock entrance to the remaining parking lot space. But a barrier still needed to be created as to not welcome unwanted visitors or behavior. The alley that was formed between the two buildings proves challenging, hence the designation as the back side of building with an emergency exit and an exterior entrance to the building's mechanical spaces. But knowing some might choose to use this space as transitional, a green space divider was placed with ample exterior lighting to keep the space as visible as possible(fig. 39 & fig. 40).

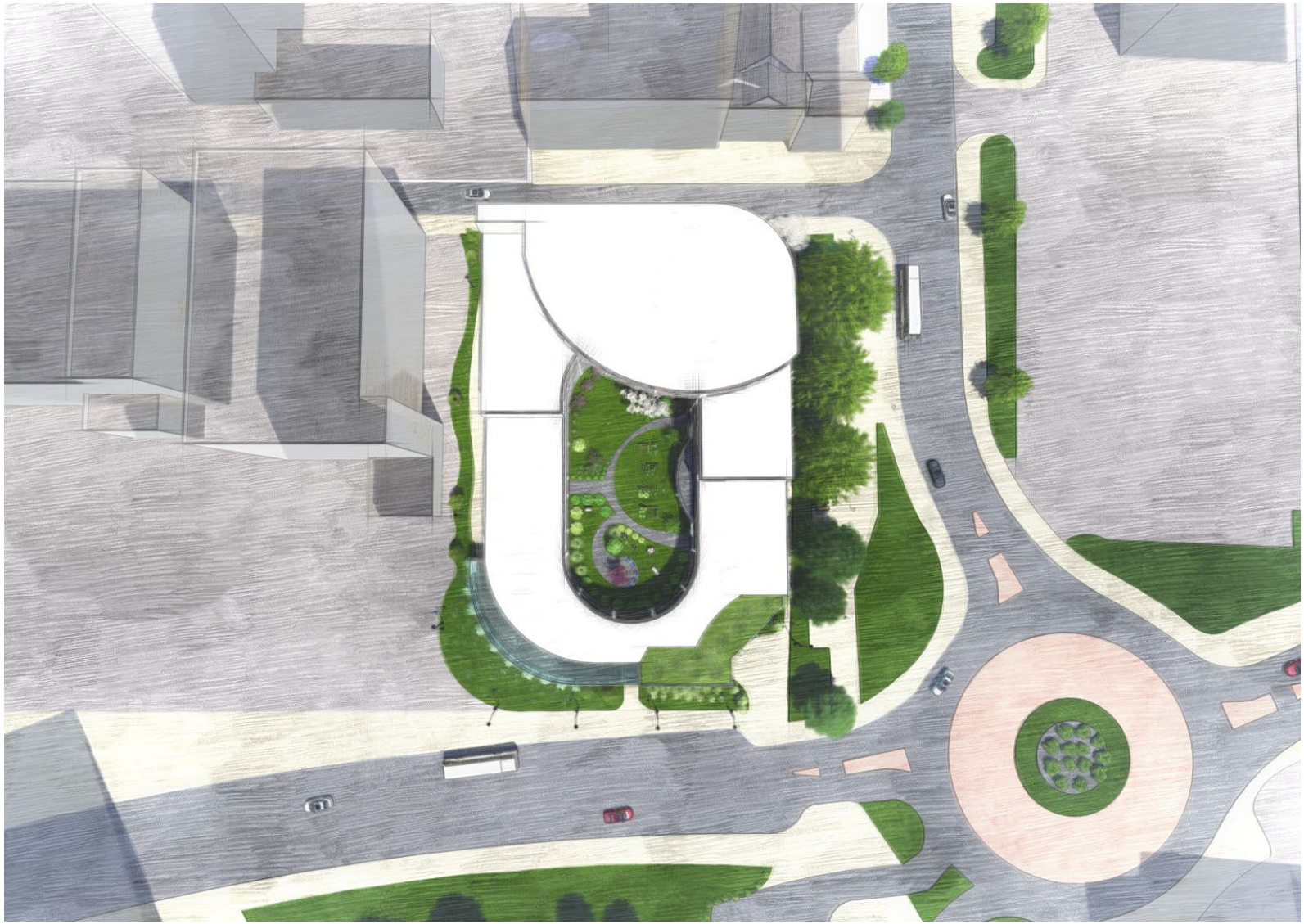


Figure 39. Site Plan, Rendered

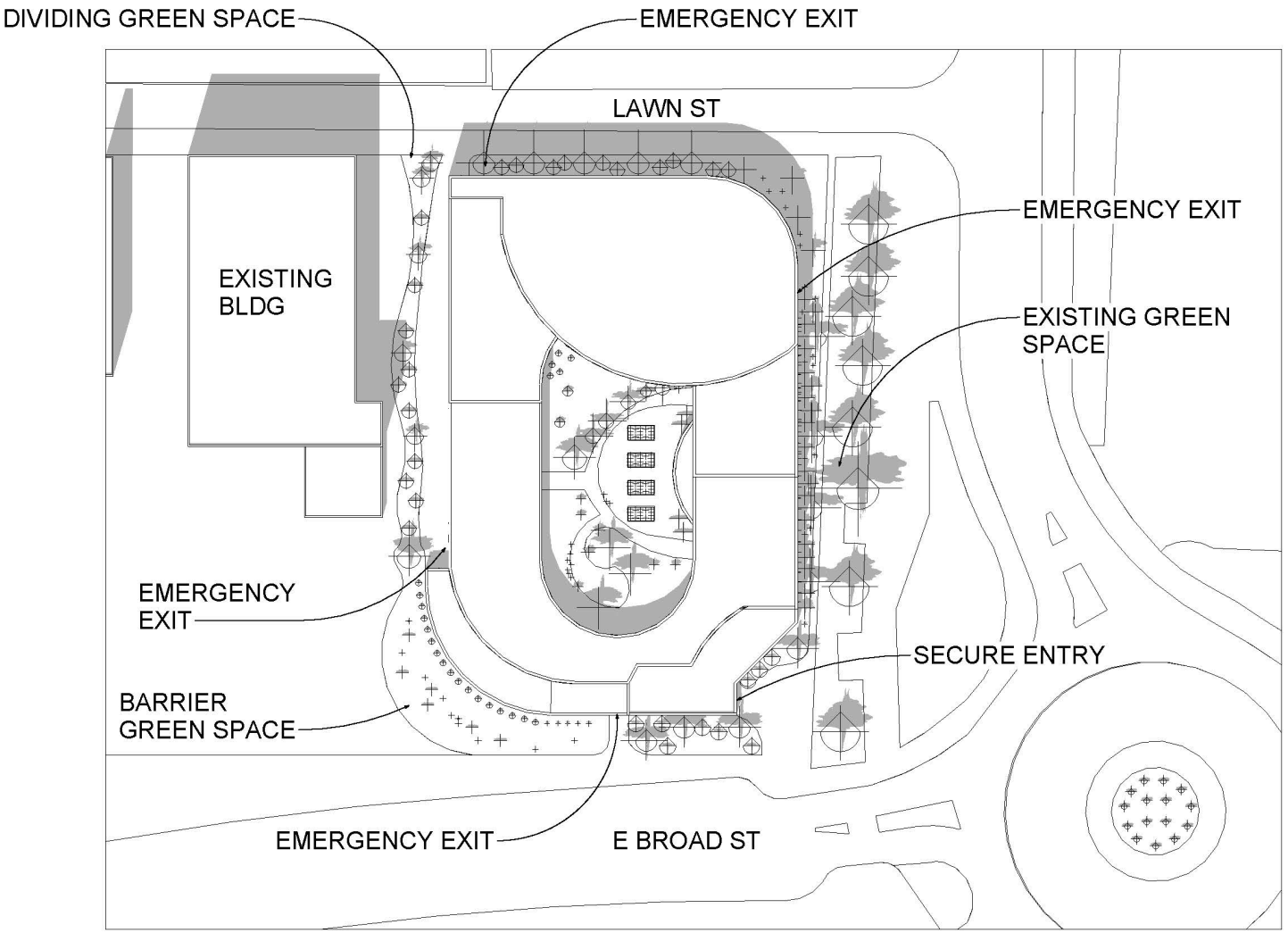


Figure 40. Site Plan, annotated

The next step in adapting the site to the design was to create an entry way that was both accessible and simultaneously not dominant. By cutting the entry into the mass, visitors and occupants are funneled towards a single point of entry. Any other doors along the perimeter of the building are considered emergency exits and are only addressed by placing pavers from these openings to the surrounding sidewalk. A substantial amount of green space is added all around the facility. The eastern façade, where the main therapy spaces reside, is heavily planted to provide both visual shielding and to also discourage people from approaching the windows and openings into these spaces.

The south western façade, where the greenhouse resides, has been treated in a similar fashion. With more space to utilize, the green area is pushed further into the pre-existing parking lot. Low-lying plantings are utilized in order to achieve as much sunlight penetration into the green house as possible.

In the western alley between the new facility and the existing building to the west, a greenway is used to divide the space and create a pathway for any occupant choosing to use this exterior transitional space. In addition, ample exterior lighting is added to keep the area well lit. No benches or similar fixtures were added since the design does not want to encourage loitering near the center.

FLOOR PLANS

The plan for the first floor is kept fairly clean and simple with broad curving strokes that keep the spaces feeling open and keeping 95% of the transitional space to the interior of the building where the most daylight infiltration can be benefited from. The central courtyard is framed almost entirely of windows. This is the most expensive aspect of the building but possibly the most important. It allows views and visibility across the entirety of the center. It also visually celebrates the central green space, a metaphorical center for self-contemplation.

In order to keep a sense of privacy near the therapy and consultation offices, without implementing a true corridor, knee walls are broken up in sections in front the doors accessing these offices. Then vertical wood slats are placed to reduce visibility but still allow air and light to pass through. These therapy offices were decisively kept more open and accessible to achieve two things; remind the occupant that there is always someone around to listen and to also reduce any feelings of entrapment when approaching uncomfortable therapeutic efforts.

The broad openness also creates a connection between occupants, even if they do not come in contact with each other. It is a powerful reminder to the individual that they are in safe space where their symptoms are respected, shared, and acknowledged. Moving up the levels, as prescribed in the programming, the privacy of the spaces increases. The second level is designated as an educational and collaborative space. The Third level fosters creative outlets and open work and study areas. The facility culminates with private spaces for work/study and artistic exploration.

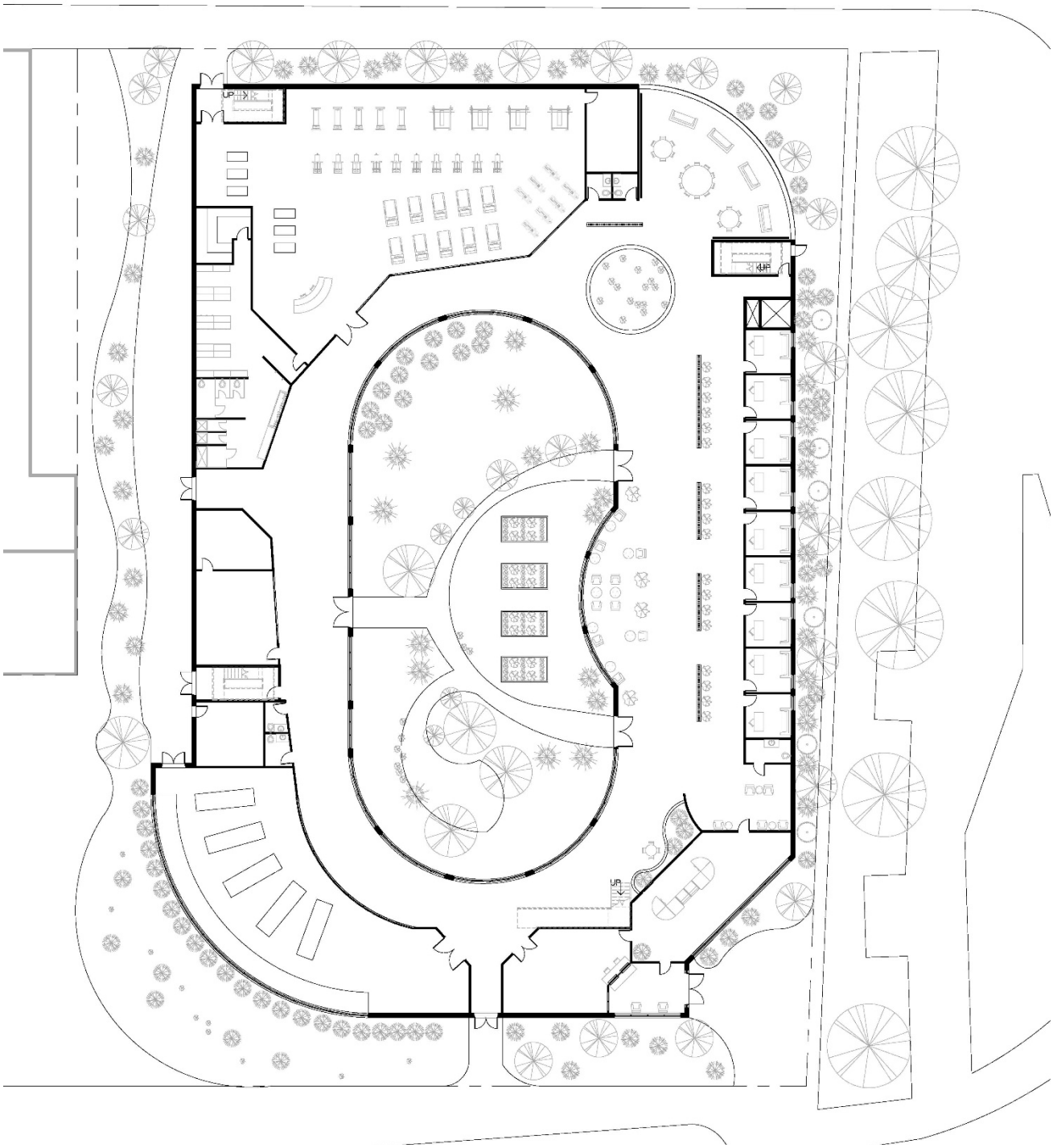


Figure 41. First Floor Plan

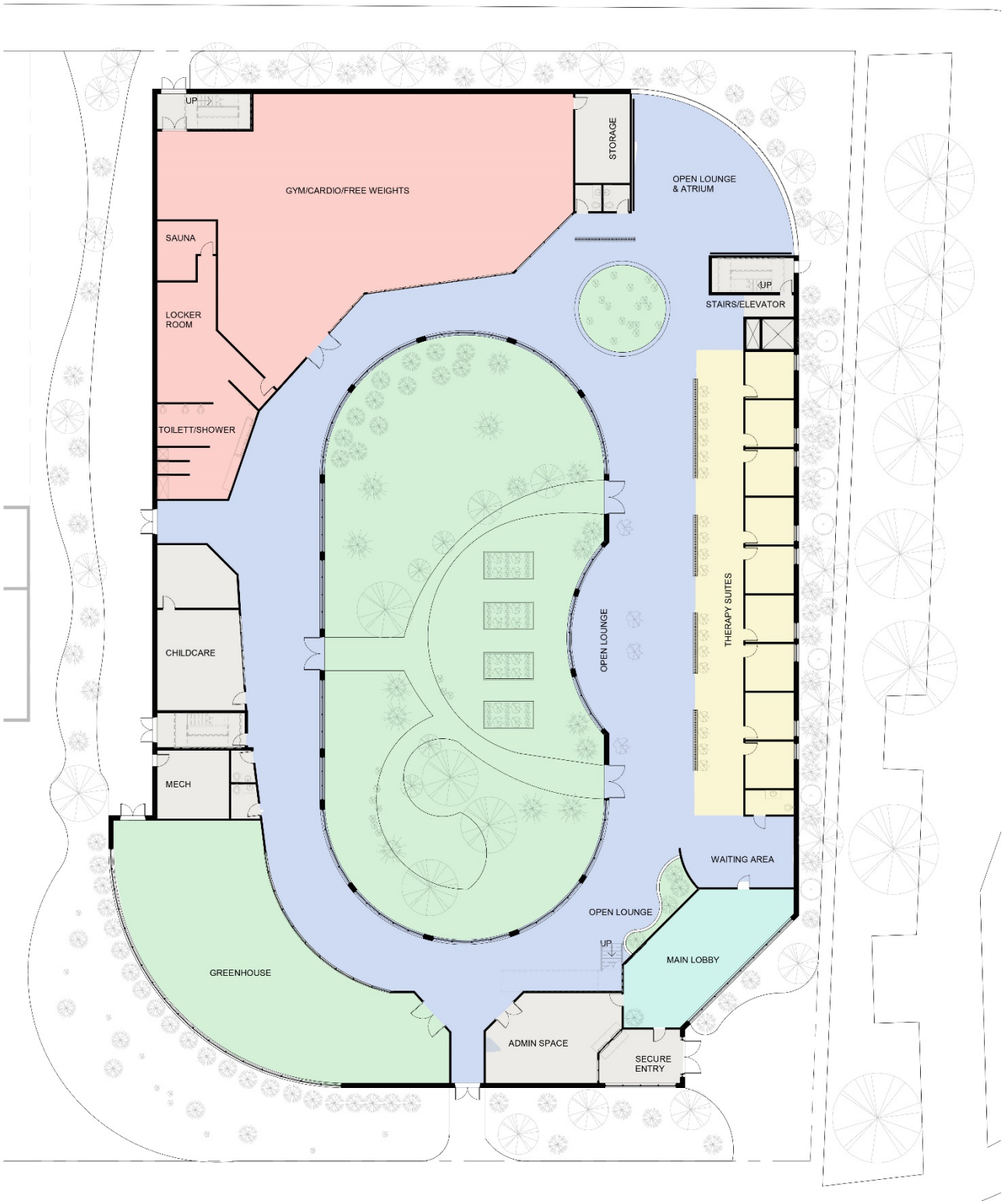


Figure 42. First Floor Plan, Programming

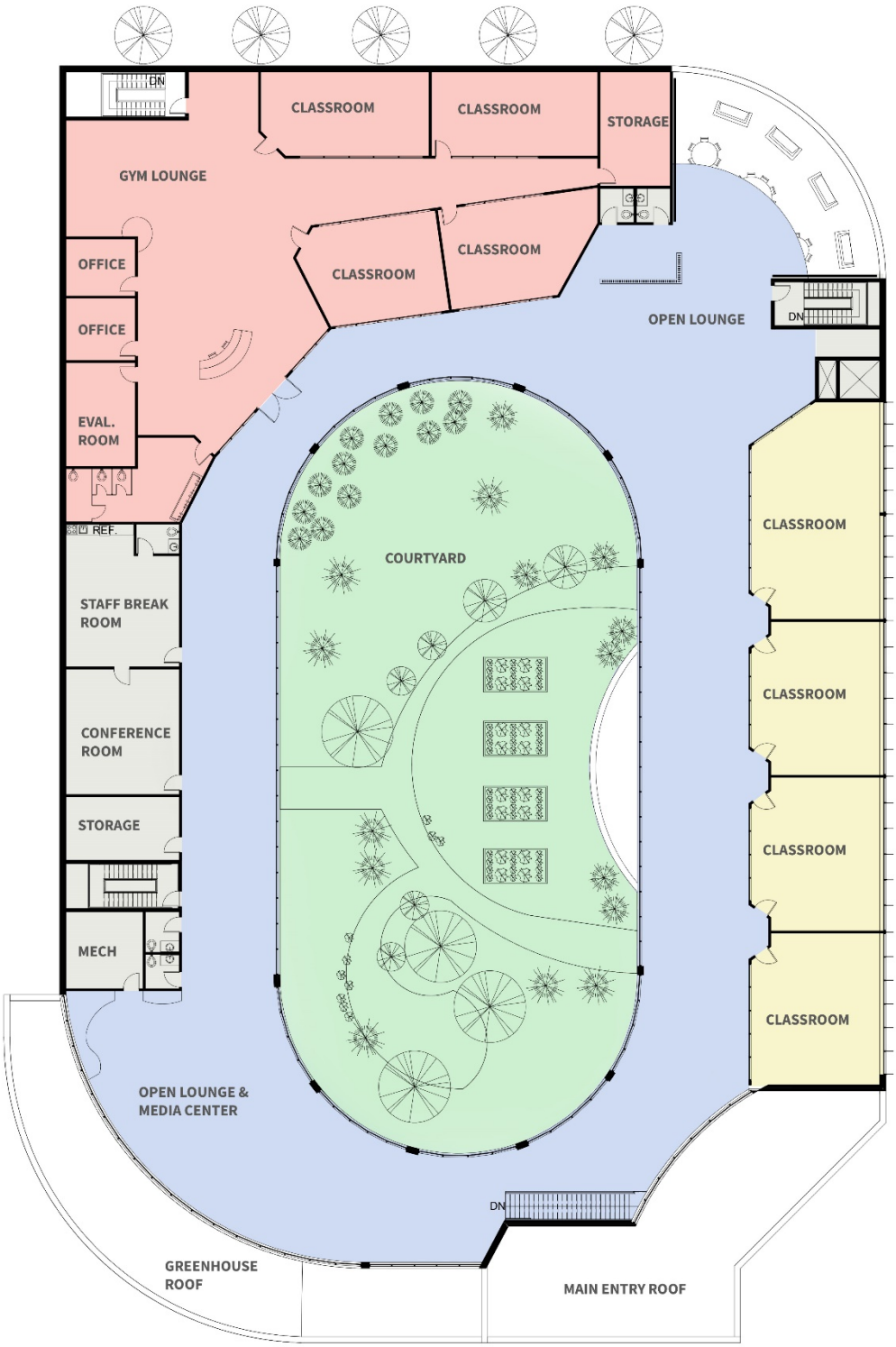


Figure 43. Second Floor Plan, programming

ELEVATIONS

With the need to strike a balance between transparency and security, the following elevations illustrate the importance of landscaping. With the first floor being the most exposed to outside voyeurism into the space, both existing trees and new plantings line the perimeter of the building. This not only creates a visual barrier but also discourages outsiders from approaching the facility at points where they aren't welcome. The southern elevation works to create a mass that feels dynamic and also non definable by current architectural typologies. It also does not reveal outright the main entry to the space (fig. 44). In order to approach the main entry, you must seek it out with a purpose.

The east elevation reveals a better view of the entry(fig. 45). Unlike most facilities similar in spacial programming, like community centers, the entry is not dominant or highlighted. While this may make it harder for first time visitors to find the entry, it serves the purpose of security. Note that the second floor classroom windows are paired with vertical sun shades to reduce the glare and the heat gain in the mornings in these spaces. This practical move also helps to create a visual separation in services and programming.

To the north, the elevation sports a colored-two story curtain wall on the eastern corner(fig.46 & 47). This design move helps to create visual interest for those on the exterior of the building, while still limiting visibility into the space. Interior wise, it creates a beautiful atrium for lounging and community gathering.

Finally, to the west, the façade remains largely flat with very few window openings(fig. 48). This side of the facility runs parallel to a neighboring building and therefore demands the most privacy.

Figure 44. South Elevation

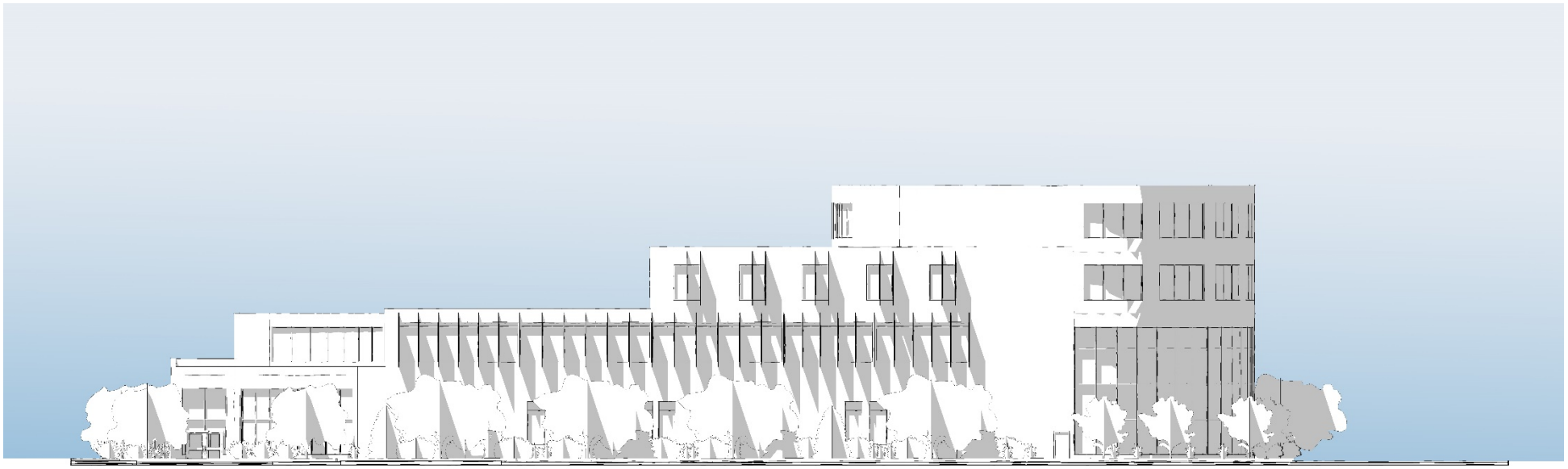


Figure 45. East Elevation

Figure 46. North Elevation

Figure 47. North East Corner

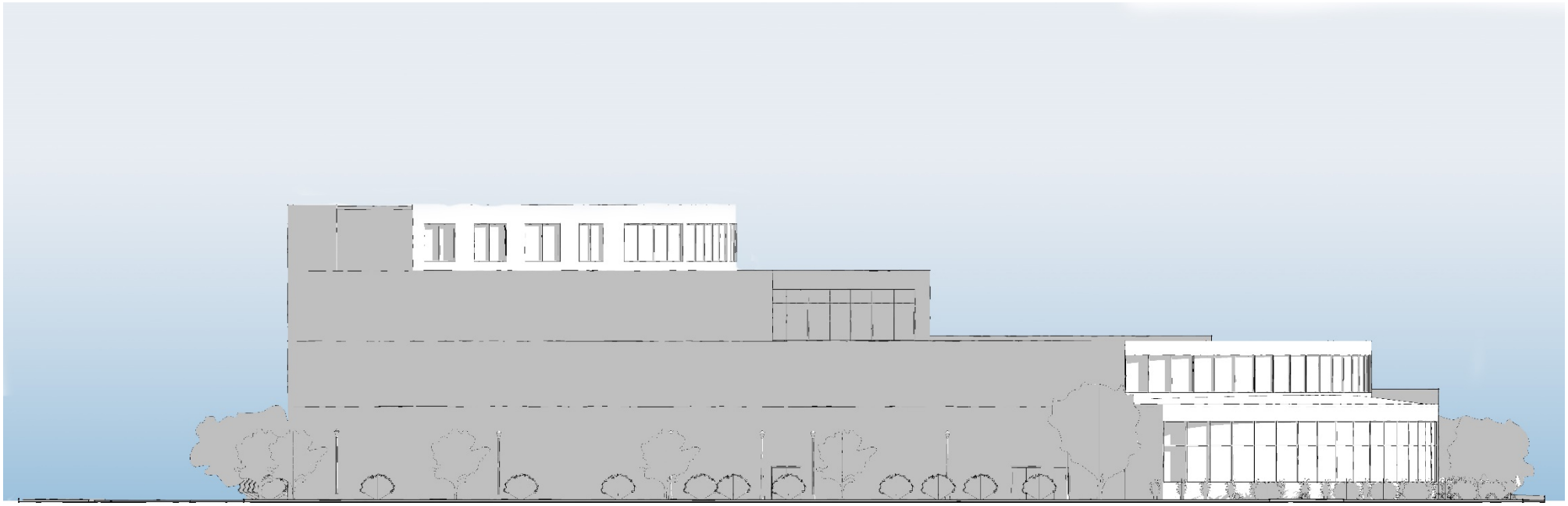


Figure 48. West Elevation

SECURE ENTRY

The concept of secure entry is one being readily and actively adopted in K-12 schools. Due to the continuous problem as mass shootings, school districts are continually seeking ways to mitigated possible assaults. Secure entry is not a new concept, but with more education spaces seeking to implement them, more creative and aesthetic designs are appearing. In the attempts to avoid a clinical aesthetic that can potentially turn away the targeted occupants, the secure entry is designed to attract through color, tall ceilings, and daylight.

Keeping the space bright and inviting is essential. The secure entry will be the very first space every single visitor will see. Because of this, an important balance needs to be struck. There will be the potential of unwanted visitors and the expected visits by delivery personnel, maintenance workers, etc. In many ways, the secure entry can be thought of as a filtering device. Transactions windows with administrators or security personnel will great each visitor. From here will check in and either be allowed to enter further into the facility or asked to wait in the entry. This is vital for survivors who fear that their assailants (typically people they know) will seek them at place of healing. A secure entry is the first line of defense against any unwanted visitors.

Following the secure entry is the lobby/waiting room. Those visiting for the first time will go a through a process to allow them easier access on their second visit. The lobby will be where they have the opportunity to sit down with a representative of the center and go over the services provided. Once this has occurred, they will finally enter the facility. Immediately stepping into a lounge area for those waiting to attend a therapy session. A wall to the left provides a map of the facility, a community bulletin board, and a schedule of any classes or events. This wayfinding and community scheduling is kept to this third and final stage of entry as an additional attempt to limit the spread of information to anyone outside of the center. Additionally, by opening directly into the area where therapy is administered, it again emphasizes the availability of such services. Simultaneously, the occupant is immediately greeted with a vista of the entirety of the center, exposing every area to a greater or lesser degree. Providing the heavily sought-after transparency after passing through the necessary privacy.

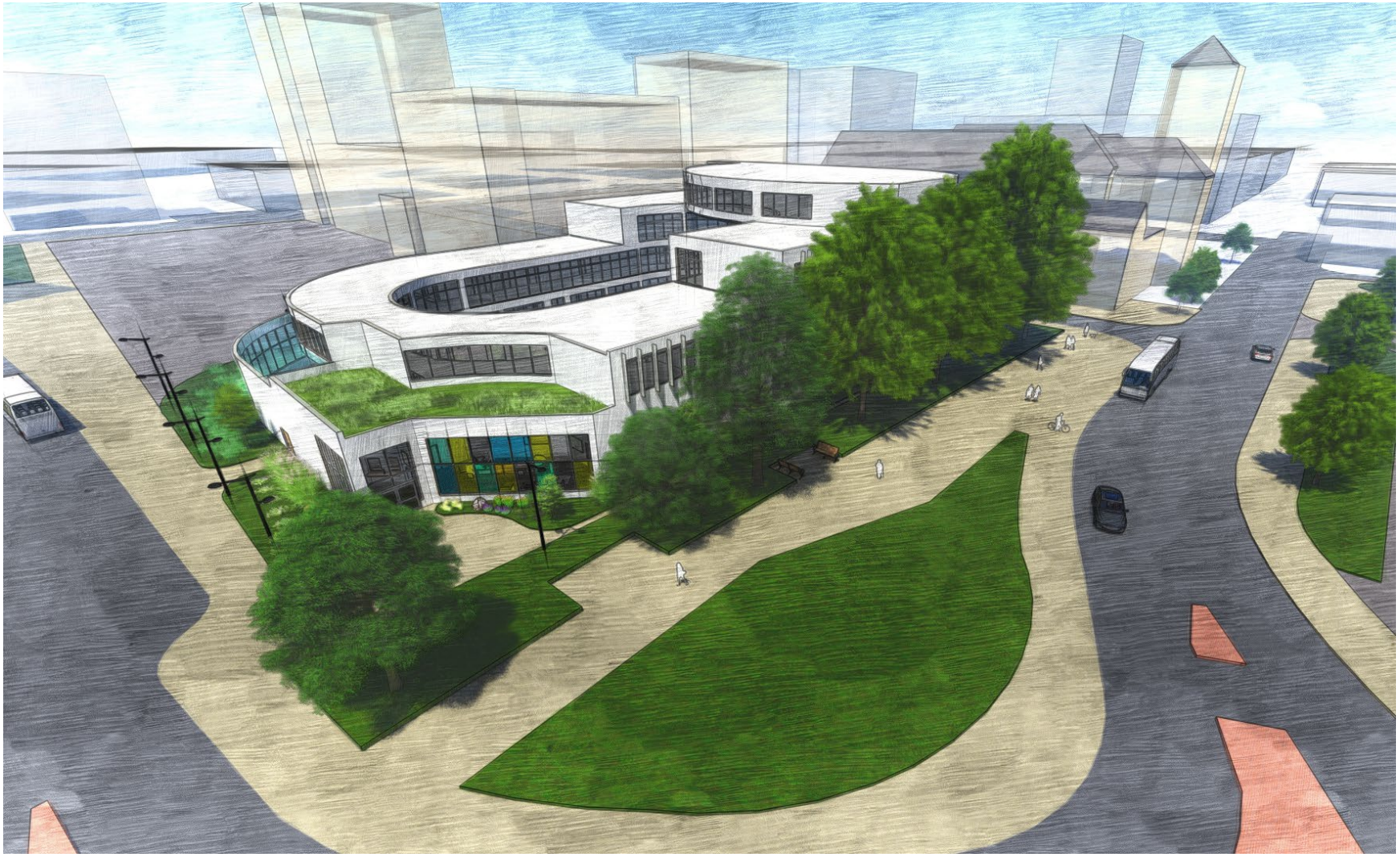


Figure 49. Secure Entry, Exterior Bird's Eye Perspective

Figure 50. Secure Entry, Exterior Perspective

Figure 51. Secure Entry, Interior Perspective

Figure 52. Secure Entry, Main Lobby Perspective

TRANSITIONAL SPACE AND WAYFINDING

The figure on the previous page illustrates the first stage of transitioning. The lobby/true main entry welcomes the users with color, open space, and a visual map on the ceiling with use of organic ceiling tiles leading occupants through to the main heart of the building. In many ways, the communal space includes all transitional space, designated lounge areas, and green space. Eliminating the overall use of corridors and hallways created a challenge in creating points of destination and separating them from areas of transition. To address this, the idea of a pooling affect helped to create these distinctions. Typically, where ever a curve occurs, there is an invitation specially to make it a point of destination: the lounge across from the therapy offices, the north east corner of the first and second floor, the north and south ends of the courtyard, the media center on the second floor, and the lounge in the study rooms overlooking the courtyard on the third and fourth floors. Like creeks often have side pools of calm water, the transitional spaces flow in and out of these pooling areas. In order to steer users into these spaces, color coded ceiling panels guide occupants to their desired destination implementing the colors used in program development.

The green space in the inner courtyard, as previously mentioned serves as an anchor. With almost all visibility for the occupants on the first floor being inward looking, the vista had been one that was calming and encouraging. It gives the user of the facility a constant reminder that they have a safe, central space, open to the sky, if they find the suddenly feel confined.

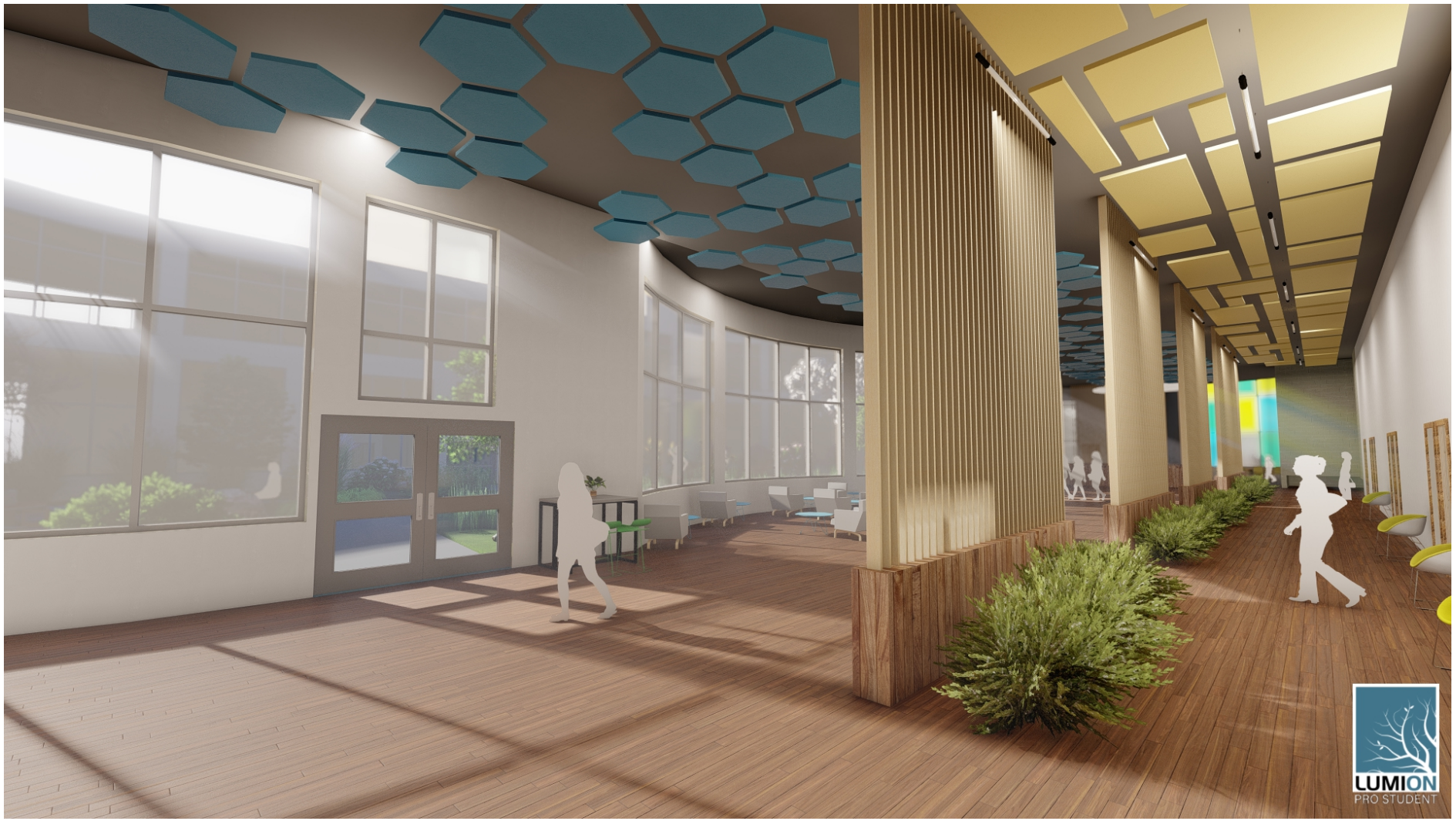


Figure 53. Main atrium, interior view

Figure 54. Main atrium, interior view2

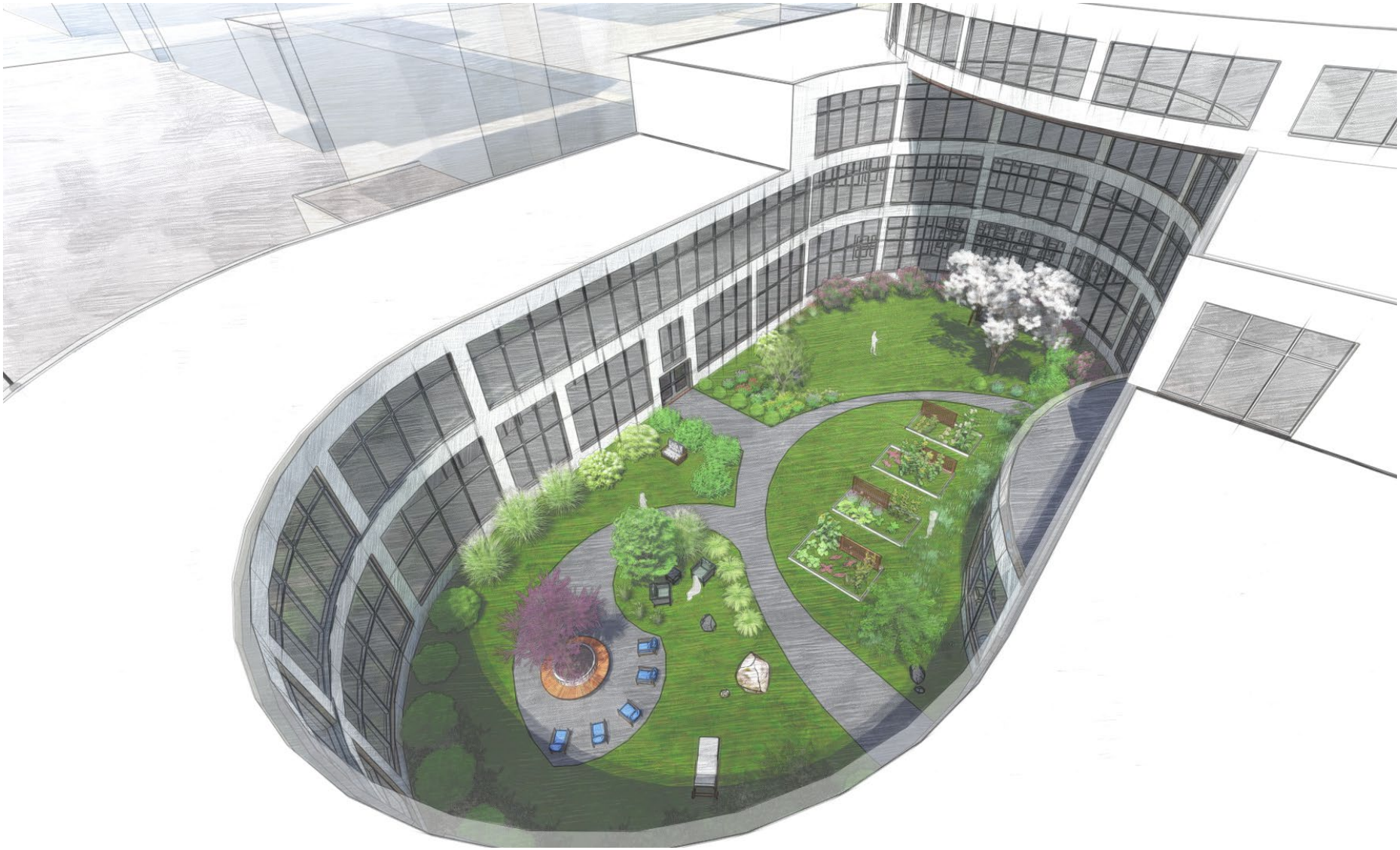


Figure 55. Courtyard, bird's eye perspective

Figure 56. Courtyard, perspective

COMPARING DESIGN

In order to prove the success of any new design or discovery, there must be a control. So, how does this conceptual design compare existing design models of hospitals and crisis centers, the only currently established facilities with any program specific to sexual assaut? Although, these architectural designs are not based upon the continuing care demands discussed in this Thesis, they represent what is believed not to work. It's important to acknowledge that places such as hospitals are designed and built under very strict codes that do have a noticeable affect one the outcome of said designs. The following comparisons will focus upon the standards discussed in this specific Thesis.

The typical hospital floor plan can often feel congested with various corridors with no openings to the outside world (fig.). Both patients and staff are often sequestered to stations, waiting areas, and semi-private treatment areas with no exposure to daylight. This can create a very stressful experience as it becomes hard to keep track of time and individuals feel cut off, uncomfortably so, from the world.

Main entries into emergency rooms or a floor dedicated to sexual Trauma is immediately accessible to anyone seeking entry(fig). This eliminates any sense of security. Compound this with the fact that sexual assault survivors typically are treated in the same spaces as other patients, and the level of anxiety for such an individual could be very detrimental to their mental health.

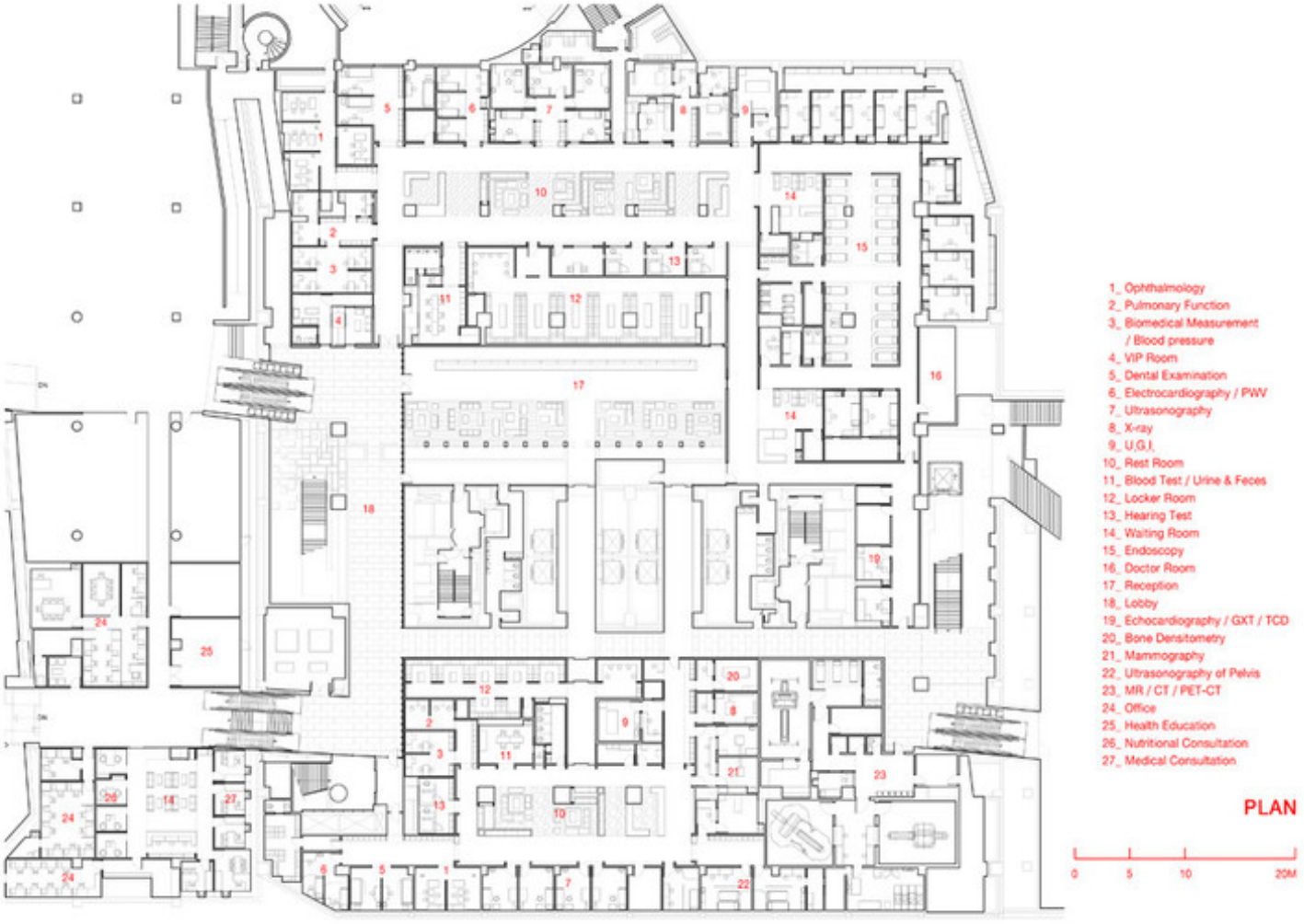


Figure 57. Common Hospital Floor Plan; retrieved from: https://www.archdaily.com/900366/hospitals-and-health-centers-50-floor-plan-examples

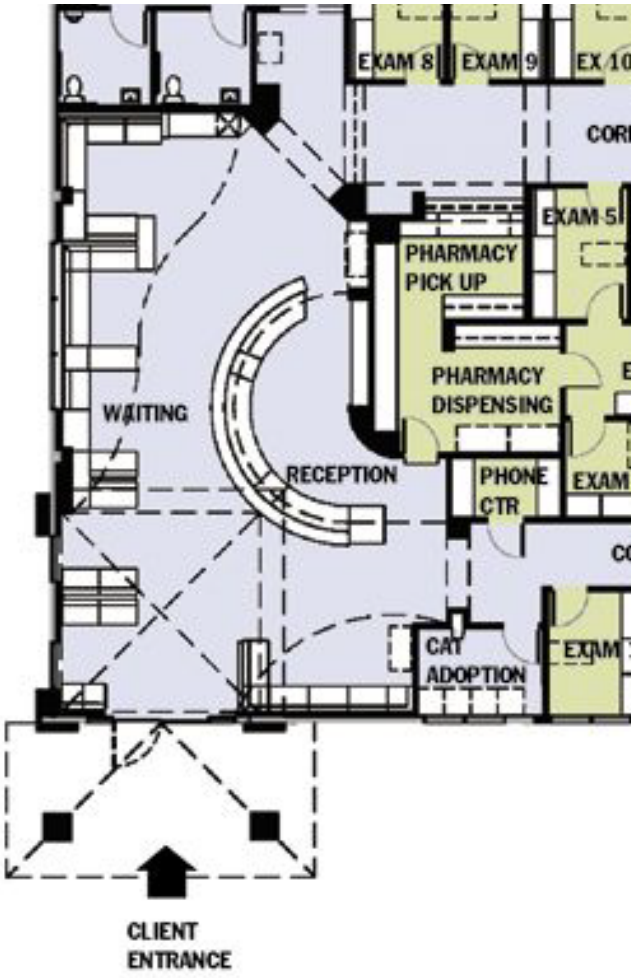


Figure 58. Hospital Entry; retrieved from: https://www.pinterest.com/pin/424605071097190529/

Traditional hospital design can be commonly described as sterile. And this would make sense considering the programmatic demands of such a space. But it is also this sterile aesthetic that can make occupants uncomfortable. It becomes none condusive to encouraging assault survivors to open up beyond any physcial medical need. This sterile aesthetic is often represented by white walls, little if any color, typical ceiling grids, and intense lighting due to lack of natural light.

Figure 59. Hospital Corridor; retrieved from: https://www.zawya.com/mena/en/business/story/Bahrain_could_soon_turn_into_specialised_health_care_destination-SNG_157704254/

The key concepts focused upon in the conceptual design for community healing center designed to service survivors of sexual assault were transparency and security. In many ways, the proposed conceptual design is the inverse of typical medical and hospital design. Where the most transparent space in the hospital is the point of entry, the point of entry proposed here is the most secure and least transparent space.

When navigating the interiors of a hospital, the occupant if faced with long corridors, that intersect other corridors at 90 degree angles, creating the very undesirable blind spots. The lack of daylighting in the interior makes the space harder to navigate with not real site lines that orient the occupant towards an exit or desired point of destination. These shortcomings were addressed in the proposed conceptual design through the central courtyard and large window walls providing both sight lines

and daylighting. Navigation is made easier through colored and patterned ceiling panels, designating a space's purpose. Narrow corridors were eliminated by push all services to the perimeter of the facility and walls were curved or gradually angled to eliminate blind areas.

CONCLUSION

Under the notion that this Thesis is proposing a concept without precedent, there is little to truly substantiate its success. The success of this design is based upon its deviation from the norm that has failed to address the needs of the Sexual Assault Survivor. Not failed due to failed design, but failure through lack of concept to meet such a need.

The research on the topic of spacial relation to the Trauma of a survivor leaves a lot to be desired. The partnership of those in the medical, psychological, and sociological fields with those in architecture would be a valuable and important first step in truly addressing these needs. The design proposed in this Thesis and others like it designed for Veterans with PTSD, aim to address a multitude of problems. And the solutions are currently incredibly expensive concepts that would be hard to find any true funding for.

As these designs become more fully backed by research and matured through design processes, a simultaneous cultural and societal investment into these populations will be necessary to see something like this come to fruition. It is the hope through this first attempt to address these challenges, that the ball at least starts to roll. Architects shape the spaces in which the world exists, through its existence and through its absence. If architects can shape the space to better serve our world, than maybe can create better avenues through which our peers can more wholly address these challenges.

LIST OF FIGURES

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